AMERICAN

NOVEMBER - 1955

Cinematographer

In This Issue •

- [illegible] the Big Scenes For The Tall Men
- [illegible] You Want To Be A Hollywood Cameraman
- The Use of "Existing Light" In TV News Photography

25¢

FOREIGN 35

Warren Smith, threading a step-printing machine says, "Du Pont 802 16-mm Sound Recording Film is used for negative and positive optical tracks Its non-halation base enhances sharpness of image for excellent sound clarity and definition."

Negative-positive machine designed by Mr Smith Lab Supervisor John Z Wergel (left) and J. Norman Bennett of Du Pont watch operation

Cameraman Anthony Mantia shoots half-hour TV show, "Abbie Neal and her Ranch Girls," on Du Pont Type 930 High Speed Rapid Reversal Motion Picture Film

"Never miss an exposure on assignment . . . thanks to the speed and latitude of Du Pont Film!"

says **WARREN R. SMITH,** *President of Warren R. Smith, Inc., Pittsburgh, Pa.*

"We use Du Pont Motion Picture Film exclusively for *every* black-and-white assignment from ball games to animated cartoons," says Mr Smith "We've simply learned to expect good results with Du Pont Films . . . and that's what we get!

"Frequently we run 1200 feet of Du Pont Film through our cameras without once stopping the mechanism . . 930 and 931 keep our cameras rolling."

When lighting conditions are poor, Du Pont Type 931 High Speed Rapid Reversal Motion Picture Film gives excellent results . . wide latitude makes retakes unnecessary. Many cameramen prefer Du Pont 930 for studio work . . . its speed and contrast range give top quality and soft-tone reproduction which are so necessary for television films An "on-location" assignment recently compelled Mr Smith's company to shoot a group of 28 half-hour programs with a light reading of only 125 foot-candles. Using 931 they were able to stop down to f/4 5, which, of course, gave them a greater depth of field

"Type 931 has less grain than any other 'fast' film, some with only half its speed " Mr Smith goes on, "In fact, Du Pont Rapid Reversal Films have inherently *less* grain than other *negative films* of the same rating

"Du Pont Rapid Reversal Films are used most extensively by our company because the hard emulsions are durable . . . can he processed rapidly at temperatures up to 125 F, with good results every time "

FOR MORE INFORMATION, write or call the nearest Du Pont District Office (listed below) or the Du Pont Company, Photo Products Department, Wilmington 98, Delaware In Canada Du Pont Company of Canada Limited, Montreal

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DALLAS 7 TEXAS	1628 Oak Lawn Ave
LOS ANGELES 38 CALIF	7051 Santa Monica Blvd
NEW YORK 11, N Y	248 West 18th Street
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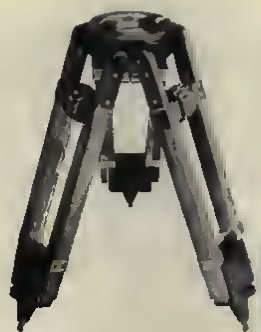

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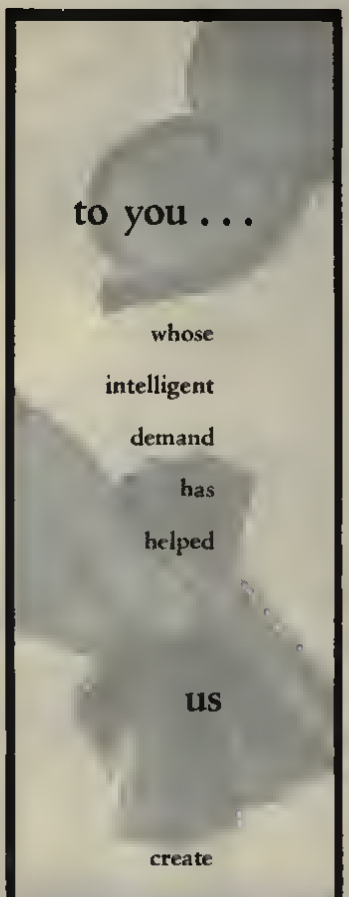

AMERICAN

Cinematographer

THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY
PUBLICATION OF THE AMERICAN SOCIETY OF CINEMATOGRAPHERS

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ON THE COVER

SOME OF the unique camera treatment and set lighting, which director of photography Joseph Ruttenberg, A.S.C., employed to such advantage in photographing "Kismet" for Metro Goldwyn-Mayer, is seen in this photo, which shows the CinemaScope camera on the RO Crane for a moving shot of Ann Blythe and Vic Damone

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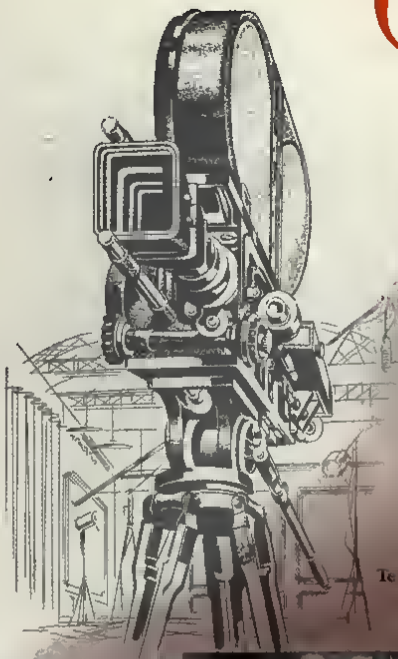

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For over 25 years constant research and engineering by Mitchell has continued to produce, year after year, the most advanced and only truly professional motion picture camera. It is traditional of Mitchell cameras that in addition to filming the wor[illegible] greatest films, they are to be found wherever new and exacting [illegible]niques of filming are being successfully used.

[illegible] g such varied fields as Te[illegible] B[illegible] Armed Services, and [illegible]otion Picture Studios.

Tom Kelley Studios shoots a TV commercial for North American Airlines with this Mitchell 35 "NC Caesar Camera is shown at center

[illegible] Mitchell 35mm [illegible] Productions on the "I Love Lucy" series with Desi Arnaz, right and Lucille Ball

the 1 and only Mitchell

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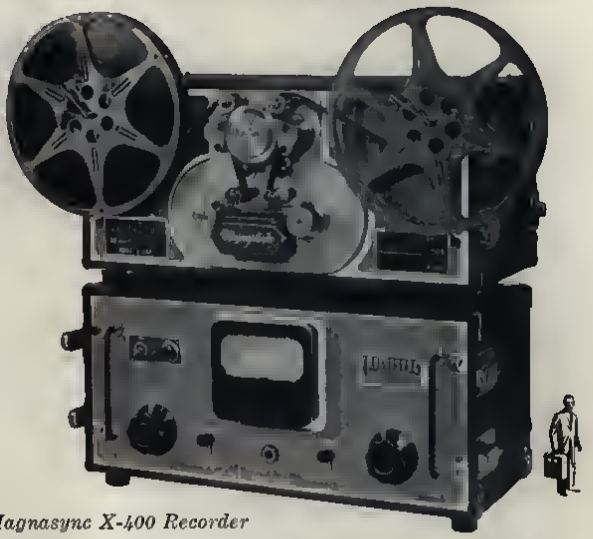

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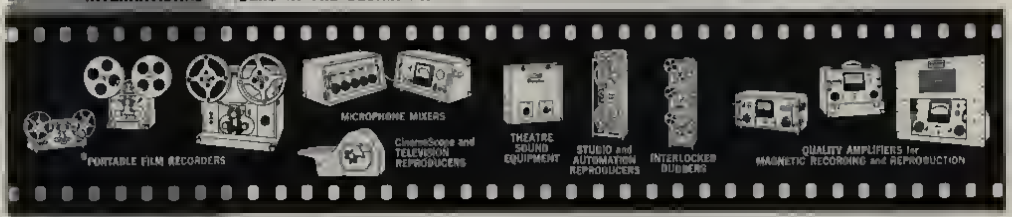

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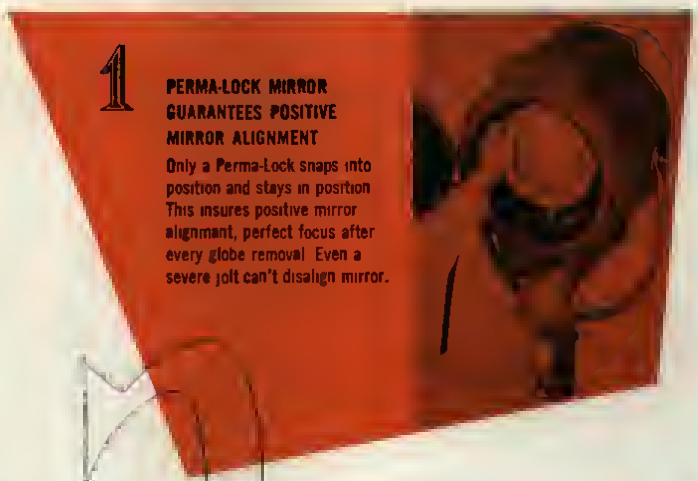
CANADA—Alex L. Clark, Ltd., 3745 Bloor St., Toronto 18 Ontario BElmont 1-3303.



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2

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DUAL CONTROL FOCUSES BOTH FRONT AND REAR

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Capital offers the creative producer the finest in motion picture laboratory facilities . . .
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WHAT'S NEW

. . . in equipment, accessories, service

Power Supply

Filmtronics, Inc., 96 Huntington St., New London, Conn., announce a portable power supply unit which has power source and converter in one small case, 7¼" x 6½" x 4¼" in size. Unit supplies 110-v of 60 cyc. A.C. current (35 watts) for driving small motion picture camera motors and other related equipment. Price of $68.50 includes battery.

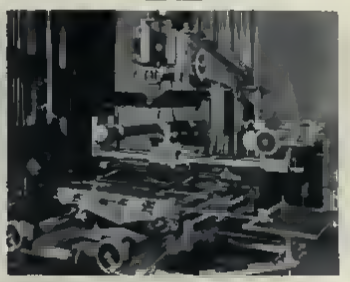
Triped Triangle

A collapsible, three-wheeled tripod triangle is announced by Cinekad Engineering Co., 500 West 52nd St., New York 19, N. Y. Features include deep-hole leg nests, and special locking device for securing tripod legs to triangle.

The salient feature, according to manufacturer, is the three heavy-duty Darnel rubber-tired, swivel casters which permit moving the camera in any direction with complete ease. Wheels have independent locking devices. Triangle folds readily to a compact, 7-lb package.

Portable Cine Light

Dormitzer Electric & Mfg. Co., Inc., 5 Hadley Street, Cambridge 40, Mass., offer a portable, light-weight lighting unit especially adaptable for newsreel photography where the light unit may be carried by the photographer. Unit gives a minimum of 20 minutes of light of 8,000 lumen seconds and 3400° K. List price is $325.00.



Animation-FX Stand

J. G. Saltzman, Inc., 480 Lexington Ave., New York 17, N. Y., announces the new model III-E Animation and Special Effects Camera Stand for animation, titles, cartooning, photography of stills, and trick cinematography. Unit is engineered especially for the industrial, educational and TV film producer.

Other features include floating peg bar system, adjustable platten holder rotatable up to 30°; new lens mount with auto-locus feature; new shadowboard permitting wipes and other special effects; special clutch motors; and unique peg bar release.

Complete technical details and price may be had by writing the manufacturer.

New Filmosound

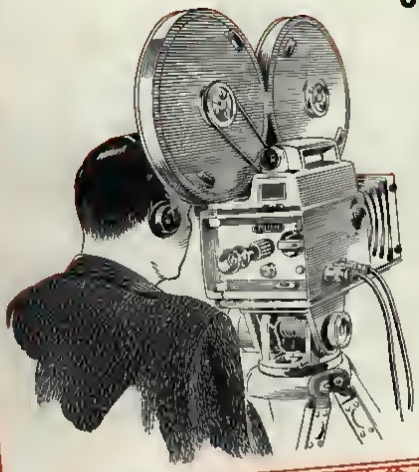
Bell & Howell Company, Chicago, announces a new model 16mm Filmosound-385, said to produce four times as much sound volume at low voltage as previous models.

New case styling and mechanical and electrical improvements are added features. Threading and projector operation remain the same. Tone control is calibrated with white dots, with a large dot indicating "flat" position midway

(Continued on Page 632)

KINESCOPE RECORDING with Guaranteed Results!

OR YOUR MONEY BACK...



NOW, A DUAL-PURPOSE AURICON "SUPER 1200" CAMERA WITH TELEVISION-TRANSCRIPTION "TV-T" SHUTTER . . . .

...designed for Kinescope Recording...and shoots regular Live Action 16mm Sound-On-Film Talking-Pictures without any Camera modification or change in the "TV-T" Shutter! The Auricon "Super 1200" Camera can Kinescope Record a continuous 30 minute show using 1200 foot film magazines. The "TV-T" Recording Shutter (United States Patent 2,677,012) works equally well with negative-positive or reversal film. This Dual-Purpose "TV-T" Shutter is also available for the "Auricon-Pro" and "Cine-Voice" Cameras. Write today for information and prices.

Auricon Cameras with "TV-T" Shutter are sold...

1. Without sound for "TV-T" Kinescope Recording of picture only.
2. With Single-System Sound-On-Film for "TV-T" Kinescope Recording of picture and sound-track on same film at same time.
3. For Variable-Area OR Variable-Density Sound-On-Film "TV-T" Recording.

Auricon 50 ft. Kinescope "TV-T" Demonstration Films are available on loan to TV Station Managers and TV Film Producers. Please request on your letterhead.

USE AURICON "TV-T" KINESCOPES FOR:

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- SPONSOR PRESENTATIONS
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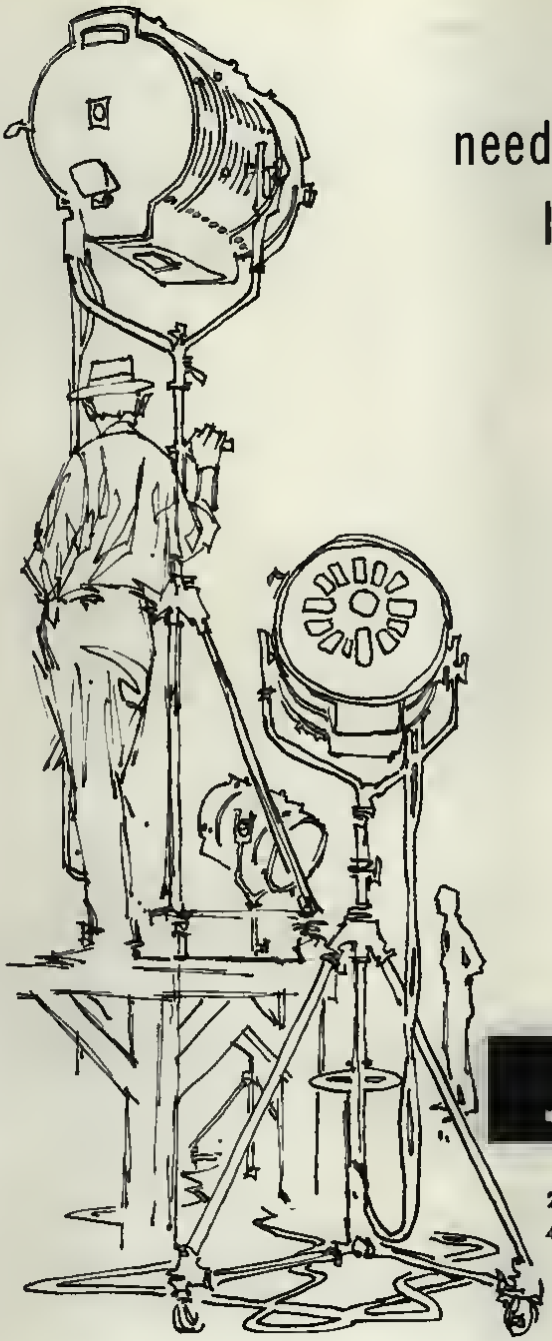
Hollywood
Bulletin Board

OVER 200 A.S.C. MEMBERS, wives and guests attended the Society's annual Ladies Night Dinner and Dance held in the Mayfair Room of the Beverly-Wilshire Hotel, Beverly Hills, on October 29th. Event marked first time in ten years that it has not been held at the A.S.C. Clubhouse. Photos (1) and (2) show happy throng during the dinner period. A.S.C. President Arthur Miller (left in photo 3) is reminiscing with Arthur Edeson and Herbert Alller. Typical dinner groups are shown in photos (4) and (5). Among those who arrived early and stayed late were Mr. and Mrs. Sol Polito (6). Greeting arriving guests (7) were Arthur Edeson, chairman of the Dinner committee (left), Arthur Miller, and Mrs. Arthur Edeson. Arrivals are Mr. and Mrs. Wm. N. Williams. The guests came to dance as well as to dine, as evidenced in photos (8) and (9). A.S.C.'s roving photographer caught Mr. and Mrs. Walter Strenge on their arrival (10), and Mr. and Mrs. Gael Anderson (11) greeting an old friend (unidentified.)

Five directors of photography, all A.S.C. members, have been selected to receive the first "George' awards created by the George Eastman House of Rochester, N. Y., as retrospective citations for their distinctive contributions to the American Cinema within the memorable silent era from 1915 to 1925. They are: Charles Rosher, Arthur Edeson, Lee Garmes, Hal Rosson, and John Seitz. The awards will be presented November 19th at ceremonies to be held at the George Eastman House.

(Continued on Page 634)



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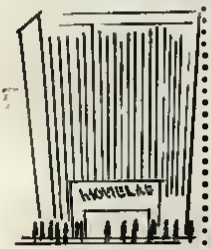

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Our 25th
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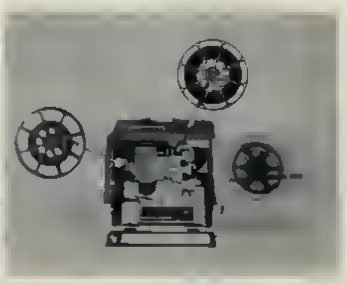
WHAT'S NEW

(Continued from Page 628)



between bass and treble. Still other features are the shuttle which engages the film gently and a longer pressure plate to hold the loop with green or new film.

Single case model retails for $464.95, has a 2-in. f/1.6 lens, 1000-w lamp.

Sound Reader

Precision Laboratories, 1139 Utica Ave, Brooklyn 3, N. Y., announce their new Model 600, Series RL, precision optical sound reader. It is a combination 16mm/35mm model designed for editing either variable-area or density tracks. Instrument can be used with film viewers operating from right or left or vice-versa. Amplifier is 4-watt high-gain, operates at 117-v., 60 cyc., A.C. Speaker is a HD Alnico.

Cine Lens Attachments

Wollensak Optical Co., Rochester, N. Y., announces a new Cine Wide-angle Lens attachment and a Cine Telephoto Lens Attachment for Bell & Howell 252 and 220 and Kodak Brownie f/2.7 and f/1.9 cameras. One lens fits all cameras, made possible by special adapter ring for the B&H cameras. Ring is not required for the Brownie cameras. Each lens lists for $22.95 each. Finders are available at $3.00 each.

Film Briefs

Recent NOMINAR 1" f/1.9 lens purchasers include:

U S Air Force
General Precision Laboratories
General Electric Co
Civil Aeronautics Admin.
Carrier Corp
Lancaster Cleft Palate Clinic
Wilding Pictures
Grandwood Broadcasting
Philco Corp

. . . and a couple of hundred other producers industrial and TV outfits using the "World's Fastest Lens."

* * *

HERB SHRINER a frequent visitor at our new showroom, has filmed some terrific underwater Kodachrome with his trusty Filmo But he's got his eye on one of our shiny, new 16mm Arriflex outfits.

* * *

A large aircraft manufacturer did some shooting in New Jersey recently Besides supplying 16mm Mitchells, our rental dept. sent out 4 10,000-watt spots, 6 5000 watt spots, 8 2000-watt spots, a slew of smaller lights with all the cables, junction boxes AND a 50-kw generator.

* * *

Have you seen our new bi-monthly bargain list? Among the bargains listed this month are

3-gang 35mm synchronizer..... ..... $87.50
Heavy-duty 16mm rewinds. . . .$11.95 pr.
11x14" camera slates. $2.74

and hundreds of others A postcard will bring it to you.

A crew is shooting in South Dakota. Suddenly the Auricon exciter lamp burns out. It's Saturday afternoon What to do?
A phone call to F&B brought a replacement by airmail, special. This happened last week.

* * *

Another new Mitchell camera . . . a BNC arriving shortly for our rental dept This one has a complete set of Cooke lenses from 18.5mm up to 150mm.

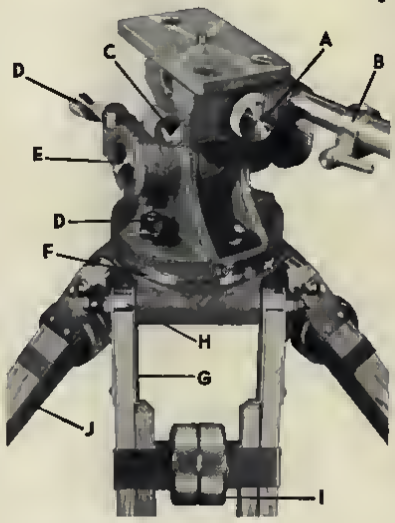
* * *

These new products now available Bell & Howell 70DR Filmo, and the 385 sound projector . . . a new CinemaScope anamorphic lens for all 35mm cameras (Price $500), also for 16mm (Price $339)

* * *

Write right now for
1 F&B complete catalog.
2 F&B Rental Price List
3 F&B Bargain List of Used Equipment.

F & B PRO CINE — THE MOST *improved* TRIPOD IN THE MEDIUM WEIGHT CLASS *for all cameras*



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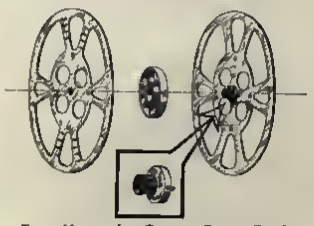

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800	"	*6.00*
1200	"	*7.50*
1600	"	*9.00*

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16mm or 35mm

in 10 SECONDS!

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The perfect camera for the motion picture film maker working in both 16mm or 35mm color or black and white.

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- The same lenses, same motor drives, same sound blimp and accessory equipment used for both 16mm or 35mm — to convert simply change the magazine.
- Precise rugged movement
- Reflex viewing
- 200 degree adjustable shutter
- Divergent three lens turret
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(Continued from Page 630)

Awards are also to be made in three other categories: actress, actor and director.

A total of 70 veteran directors of photography were considered for the awards from the nomination list submitted to the committee They are: David Abel, Lucien Andriot, John Arnold, Friend Baker, John W. Boyle, Norbert Brodine, Charles G. Clarke, Daniel Clark, William Daniels, Faxon Dean, Robert DeGrasse, Max Dupont, Edward Dupar, Elmer Dyer.

Paul Eagler, Arthur Edeson, Max Fabian, Harry Fischbeck, George Folsey, Lee Garmes, Merritt Gersted, Alfred Gilks, Bert Glennon, Ernest Haller, Byron Haskins, Sidney Hickox, Ray June, J. Roy Hunt, Fred Jackman, Roy Klaffki Benjamin Klein, Edwin Linden, John J. Mescal, Jack Mackenzie Victor Milner, Virgil Miller, Arthur C. Miller, Hal Mohr, Nicholas Musuraca, Ira Morgan.

Ernest Miller, Harry Newman, Roy Overbough, Ernest Palmer, Paul Perry. Harry Perry, Gus Peterson, Sol Polito, Lewis Physioc, Irving Reis, Jackson J Rose, Charles Rosher, Hal Rosson, Joseph Ruttenberg, John F. Seitz, Allen Seigler, George Schneiderman, Henry Sharp, Harry Stradling, Karl Struss

Philip Tannura, John Stumar, J O. Taylor, Roland Totheroh, Charles Van Enger, James Van Trees, Dwight Warren, Gilbert Warrenton, Joseph Walker, L. Guy Wilkie, and Alvin Wycoff.

The above were nominated on the basis that they were active as cinematographers in Hollywood during 1915-1925. In selecting those who are to receive the awards, their individual contributions were considered. Chairman of the committee conducting the balloting and making the awards is Jesse L Lasky, with producer Carey Wilson, actor Jack Mulhall, director Frank Borzage, and cinematographer Jackson J. Rose among committee members

• • •

The 28th Academy Awards Presentations has been set for Wednesday, March 21, 1956, with televising of the Awards Nominations—an event begun this year—set for an unnanounced date a week earlier.

• • •

Development of a new system by Eastman Kodak Company for speedy kinescope recording of color television programs has been announced System makes it possible to record a color television program on special black-and-white film—called lenticular film—and to retelecast the program in color The film can be processed in about an hour. New system is said to give good quality reproduction at reasonable cost.

• • •

Three A.S.C. members were elected last month to the Board of Directors of the Motion Picture Research Council in Hollywood They are Sol Halprin, head of the camera department at Twentieth Century-Fox Studio, Farciot Edouart, in charge of special photographic effects at Paramount Studio, and Ub Iwerks, head of Special Processes at Walt Disney Studio

• • •

A.S.C. Member Ira Morgan's name was inadvertently omitted from the credit titles on Screen Gem's "White Buffalo," TV film drama which Morgan photographed and which was televised nationally on October 14th.

• • •

Don Malkames, A.S.C., of Tuckahoe, New York, last month was directing the photography of "The Burglar," Samson Productions feature starring Dan Duryea, Martha Vickers, Jayne Mansfield, Mickey Shaughnessy, and Peter Capell, and filmed on the East coast

• • •

"Phantom Horse," feature film production of the Daiei Motion Picture Company, Tokyo, and photographed in Japan by director of photography N Takahashi, was the program feature of the October 10th meeting of the American Society of Cinematographers, courtesy of Samuel Goldwyn, U. S distributor.

The fine color photography was roundly applauded by Takahashi's Hollywood contemporaries, and the production as a whole was considered one of the best to come out of Japan studios in some time

• • •

Another Japanese film to be previewed in Hollywood last month was "Shuzenji Monogatari" ("The Mask of Destiny"), photographed in Eastman Color and produced by Shochiku Company, Ltd., Tokyo. Screening was held at the clubhouse theatre of the Screen Director's Guild, to which the A.S.C. membership was also invited.

• • •

Elected to Associate Membership in the American Society of Cinematographers last month were Lou Vincent, who is associated with Filmservice Laboratories, Inc, Hollywood, and Mr Ub Iwerks, one of the pioneers in the animated cartoon industry and presently Director of Special Processes at the Walt Disney Studio in Burbank.

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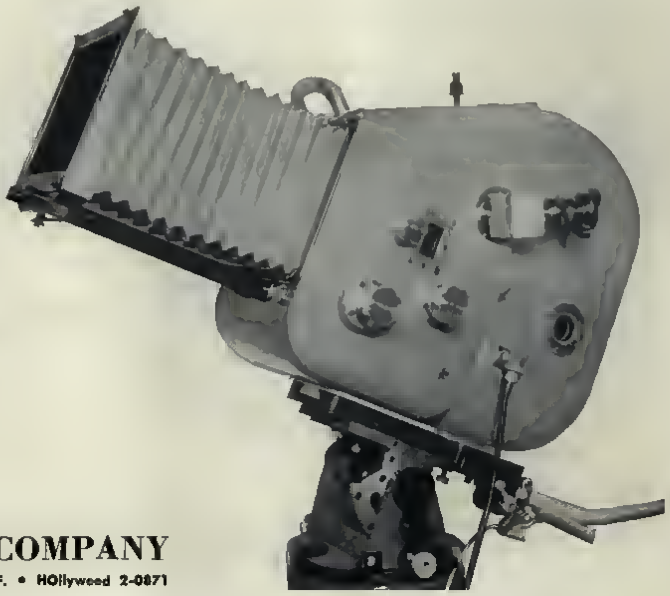

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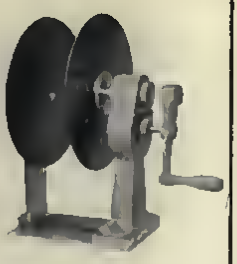

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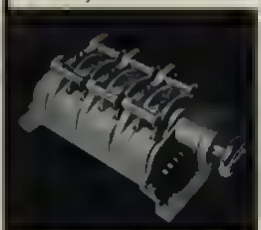

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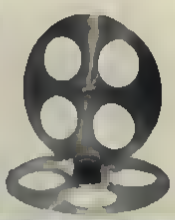

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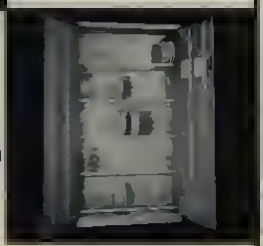

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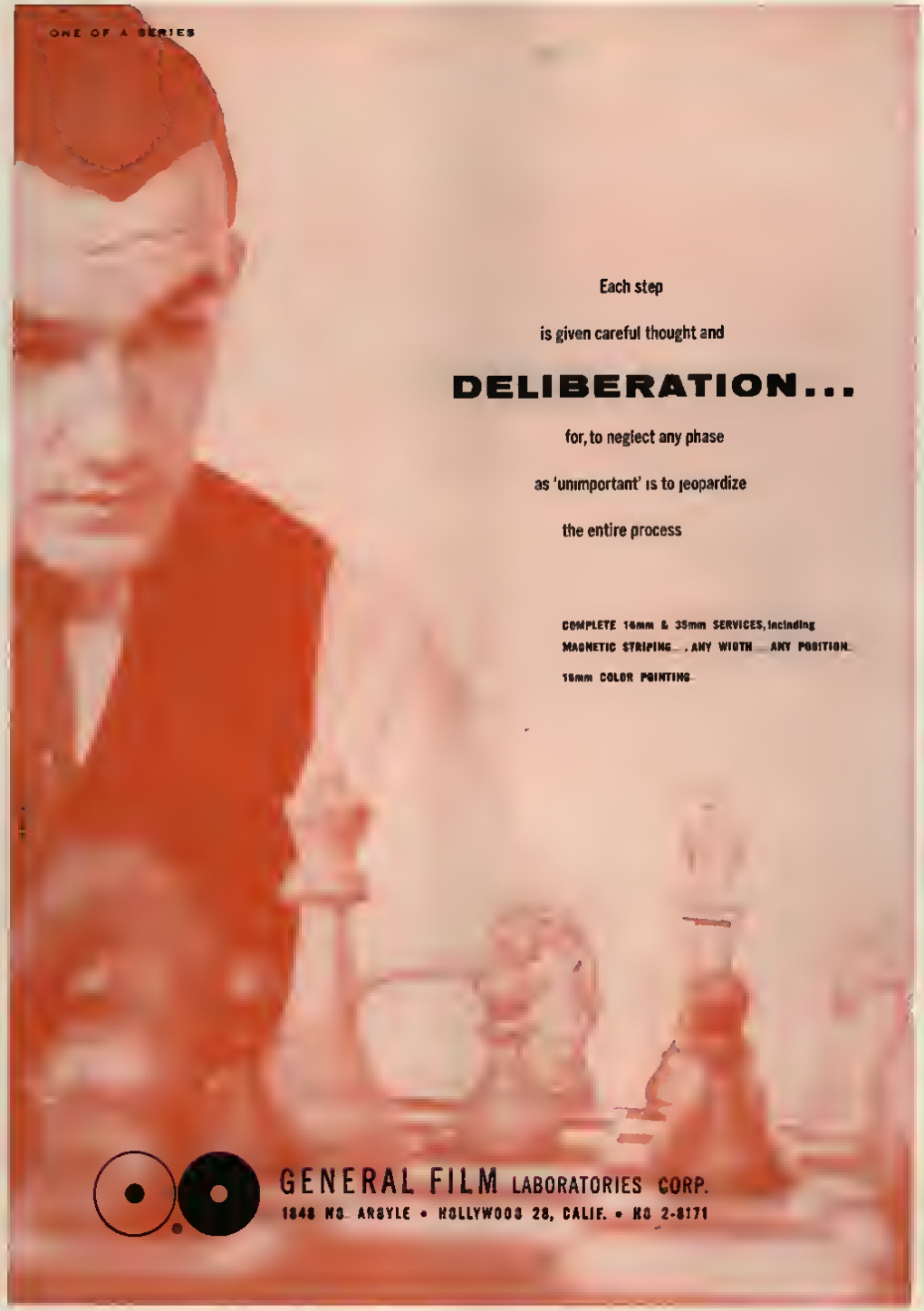
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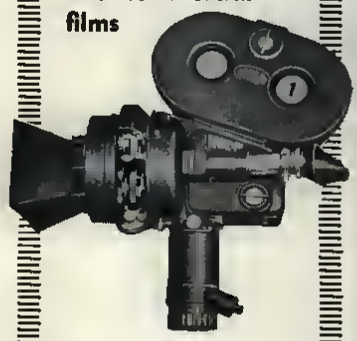

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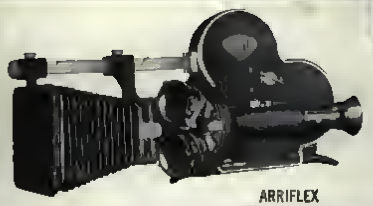
IN FORMAL RAIMENT, you can't tell a cameraman from an actor. So to make it easy for you, we've put an arrow (1) on Irving Glassberg, A.S.C., (2) on Milton Krasner A.S.C, and (3) on Harry Hallenberger, A.S.C., so you can readily identify them in this still made in 1934 Festive occasion honored Adolph Menjou on 20th anniversary of his debut as film player while he was starring in the Charles R. Rogers' production, "The Great Flirtation," filmed at Paramount

MAN FROM OUTER SPACE? Long before the days of space talk, Elmer Dyer, A.S.C., was one of the most sought-after aerial and stunt cameramen in the industry. Way back in the twenties, he rigged up his camera on the rear of a motorcycle to shoot a six-day bicycle race. He's still an active cameraman in Hollywood

AH! THE GOOD OLD DAYS—the "hectic twenties" when soundies made their debut, making it necessary to shoot on the sound stage in soundproofed sweatboxes like the one shown here. Peering from left window is Phil Tannura, A.S.C., who now shoots the Burns and Allen TV shows. Framed in the right window is Walter Strenge, A.S.C., who—now sans moustache—photographs the "This Is The Life" TV series for Family Films in Hollywood. The third man, a camera assistant, is unidentified.



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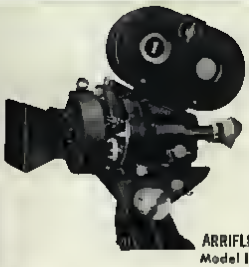

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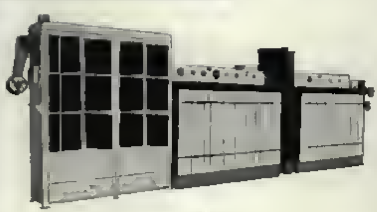

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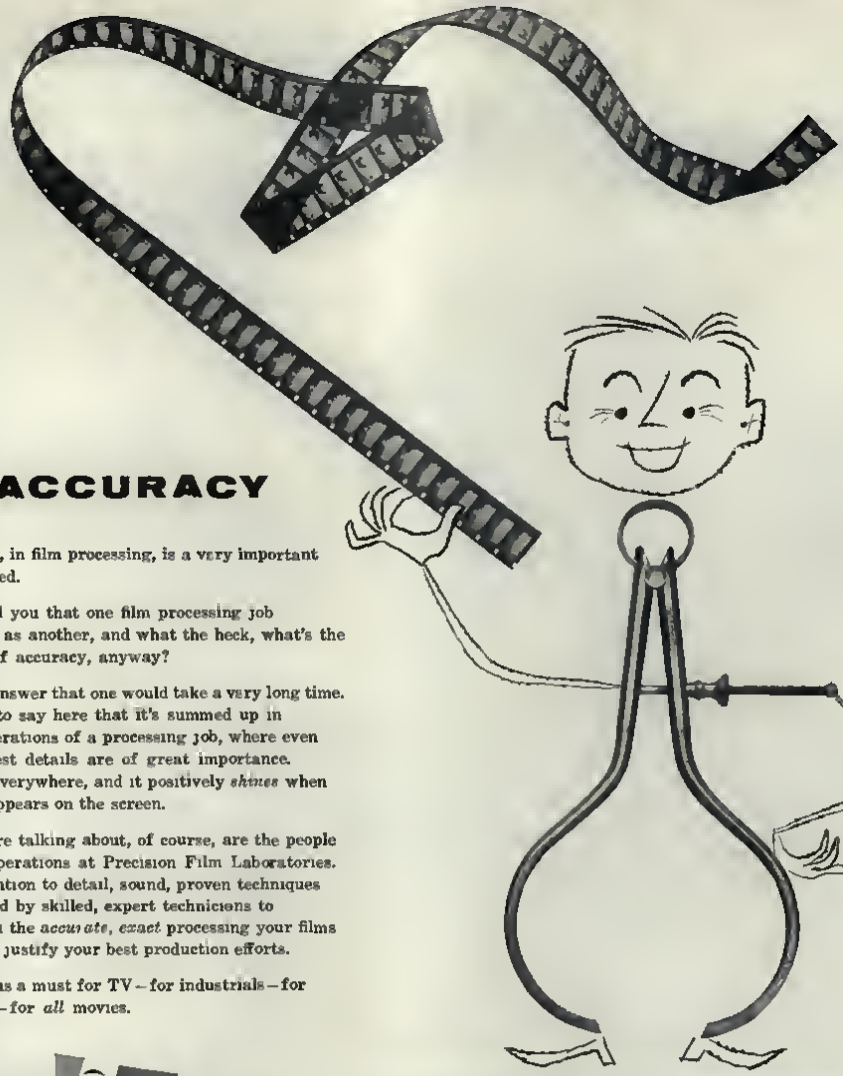

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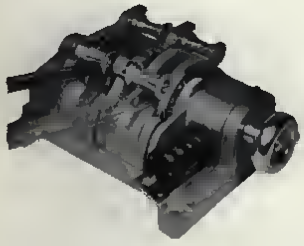

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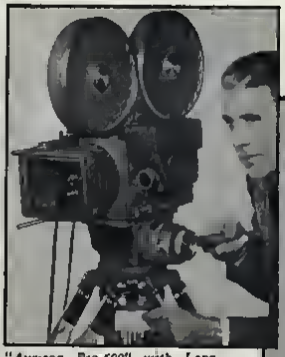

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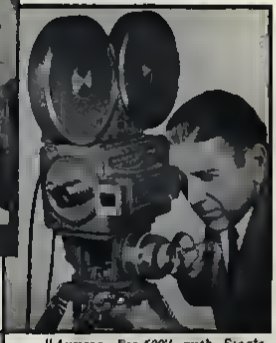

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IN PLANNING the exterior photography of "The Tall Men," the aim was to maintain a feeling of "bigness" in the scenes in keeping with the scope of the CinemaScope frame. This was particularly true with the close shots, as shown here. The figures in the foreground were backdropped by mountain vistas, the herd of moving cattle or the wagon train

Shooting The Big Scenes For "The Tall Men"

By LEO TOVER, A.S.C.

IN ANY DISCUSSION of the photography of "The Tall Men," the opening sequence filmed in the snow and the climactic scenes of the cattle stampede must be considered apart from the rest of the photography, if for no other reason than the very scope of the photographic operations involved. The thrilling cattle stampede, which highlights the closing moments of the film, is the greatest both in actual size and dramatic impact, of any yet filmed by a Hollywood motion picture company. It involved more cattle, more horses, more film players, and more technicians than any similar undertaking in the annals of motion picture history. And it demanded almost military-like planning and execution in the photography, due to the vast number of elements involved—human and otherwise.

Leo Tover, A.S.C.

A task hardly less monumental was the photography of the exterior snow sequence which opens the film and shows Clark Gable and his saddle-partner Cameron Mitchell riding through a treacherous mountain pass in a blizzard, enroute to the frontier town of Mineral City, Montana. This action was filmed during actual snowstorms in the vicinity of Sun Valley, Idaho.

But we're getting a little ahead of the story.

Months before shooting began in Sun Valley on this 20th Century-Fox CinemaScope production, there was an extensive period of pre-production planning, much of which involved lengthy visits to various regions of the West for

the purpose of scouting locations. Normally, the layman thinks of the director of photography's task as a simple matter of arriving at the location site and then lining up the camera to encompass the scene or action described in the shooting script. This is rarely the case, and definitely was not so in the case of "The Tall Men." The planning of the photography, selection of locations, estimating the equipment requirements for such a vast undertaking—all this became a major pre-production phase of the picture's overall planning. Our biggest problem was finding the many locations that were specified in the script. Each particular sequence of the vast overland trek, which is the basic story action, had to be enacted in a different location. In the picture, Gable, Cameron, and Robert Ryan undertake to drive a tremendous herd of cattle north from Texas to Montana. Actually, the long ride of these men begins in Montana—in the snow country—thence to the Mexican Border and back to Montana. Director Raoul Walsh, Unit Production Manager Joe Behm, Art Director Mark-Lee Kirk and myself covered hundreds of miles, searching for just the right locale for every exterior scene of the story.

None of the Sun Valley locations were easily accessible nor had any of them ever been photographed before. All these locations had to be opened to us by snowplows; cameras had to be brought in by ski-sleds; and pack-horses were used to convey the vast array of other equipment we used. With four feet of snow on the ground, and the temperature standing steadily at twenty below zero, it was a rough location to work in.

The intense light that prevailed on the exterior snow scenes presented quite an exposure problem. The CinemaScope lenses can be stopped down only to f/16 and on most occasions the meter reading was above this figure. Filters were therefore used to diminish the light reaching the film. I used two: one, the combination 85-30 neutral density filter, which cut one stop, was used quite a bit of the time; and on the day-for-night shots, the combination 85-60 ND filter, which cut exposure two stops, was used.

Most of the close shots for the snow

(Continued on Page 668)

MAKING A long dolly shot on the longest dolly tracks ever laid for a location exterior. From the laying of tracks to executing the actual takes required almost military-like planning and execution.

A CLOSER view of the dolly-mounted camera as it moved along with Clark Gable and Cameron Mitchell for a two-shot backed by the vast herd, the horses, and the moving wagon train.

SEEN ABOVE are the "snorkle" stacks mounted on the huge arc lamps. Their purpose is to direct the wind-borne smoke issuing from the arc lamps out of camera range. Also to be noted in these pictures is the unusually light camera equipment used.

THE VERY realistic "exterior" constructed on one of the sound stages at Twentieth Century-Fox. Here it was important to carefully match the weather, and the quality and direction of the lighting as it existed in the real scene on location.

TOUGHEST, THINNEST FILM . . . .

Du Pont's new Cronar polyester film base, now in production and soon to be made available in motion picture negative and positive films, holds many benefits for the motion picture industry.

THINNER, TOUGHER, and out-performing present cellulose triacetate film base in many ways is Cronar—new polyester film base developed by Du Pont. Cronar. brother of Mylar polyester film and half-brother to Dacron polyester fiber, is at least two times stronger than conventional film bases.

In the realm of motion pictures, the film promises more durability, improved optical quality, and chemical and dimensional stability. It promises the industry a film base that will not break as easily as today's motion picture film. A six-foot loop of Cronar base showed virtually no sign of perforation failure after more than 3,000 projections, while the film base now in use failed after 1,500 projections. Tests at Du Pont's Photo Products Research Laboratory showed that Cronar base could be flexed more than 15,000 times before breaking Present film base on the other hand, broke after forty flexings.

Cronar is destined to be the film base of the future, supplanting the present triacetate film. Early last month the Du Pont Company announced that it had licensed Eastman Kodak Company to manufacture polyester photographic base and film under Du Pont patents. The license, which is non-exclusive and non-transferable, grants Eastman and its subsidiaries the right to make polyester film base and use it in making photographic film.

Du Pont has been producing pilot plant quantities of Cronar for the past three years and is currently starting up a large-scale unit to manufacture the new base at its Parlin, N. J., plant where existing facilities will be used to convert it into finished photographic film Du Pont has given its polyester base and the photographic film made therefrom the trademark, Cronar.

AT PRESENT, splicing of Cronar film is by means of adhesive Mylar tape, as demenstrated here by DuPont's Wilton R Holm (center). Alternative splicing techniques are in final stages of development and will be announced prior to full commercialization of Cronar film

Dr. Deane R. White, at the opening session of the Society of Motion Picture and Television Engineers at Lake Placid Club, New York, last month read a paper on the subject of this new film base which he had prepared in collaboration with Charles J. Gass, Emery Meschter and Wilton R. Holm.

Among other things the paper points out that very early in the development program of this new film base it became apparent that, because of the outstanding strength and durability of polyester base, it might be feasible to reduce the thickness of motion picture film support significantly below the 5.5 mil standard thickness used for present film bases. "A survey was made within the industry," the paper states, "and the consensus was that such a reduction in film thickness would be desirable since it would result in such economic and film-handling advantages as more footage per reel, fewer reels and containers, and less shipping weight per picture. Early experiments led to the conclusion that a 4 mil polyester base would give satisfactory performance. All data accumulated to date indicates that satisfactory film structures can be made with 4 mil base. Actually, for 16mm film, still thinner base appears

possible, which has important significance in the TV field.

"The use of base 4 mils in thickness allows approximately 35% more footage to be packed in existing 1000-ft. and 2000-ft. film cans. A similar increase in footage can be expected for camera magazines, permitting longer shooting without reloading.

"To date, several hundred thousand feet of polyester safety films of various types and polyester clear leader, all 4 mils thick, made in the pilot plant at Parlin, have been tested in East and West Coast studios and laboratories. All the tests indicated that the 4 mil base is able to perform in highly satisfactory fashion. Tests included printing, processing, camera exposure and sound recording operations on both 35mm and 16mm films. They include standard motion picture operations as well as certain special industrial applications in which film has not been able to perform satisfactorily in the past. Some of these applications have been made possible by the superior toughness and durability of the film; others because of its excellent dimensional stability.

"Several thousand feet of the film of various types, including camera negative, release positive, master positive, dupliate negative, and variable area sound recording films have been evaluated in the Hollywood motion picture studios and laboratories under the sponsorship of the Motion Picture Research Council. In no case did 4 mil films fail to perform satisfactorily in these tests.

"Tests of negative emulsions on 4 mil polyester base were arranged to determine problems or difficulties that might be encountered in production cameras. Tests in Standard and

INSPECTING the very first test negatives ever photographed on Cronar base are (l to r.) Wm A. Cushman, A.S.C., of DuPont, actor Ralph Bellamy, star of "Man Against Crime" TV film series, and director of photography Don Malkames, A S C., who photographs the "Man Against Crime" series for CBS-TV.

NC Mitchell cameras proved the complete absence of mechanical troubles attributable to the film material and thickness. Good steadness and acceptable low camera noise were shown. High speed, up to four times normal, was included in these tests at the MGM and Republic studios without any difficulty. Adjustment of the pressure plate appeared to improve definition slightly, although tests made without such adjustments were judged equivalent in definition to standard negative film on 5.5 mil base.

"The Motion Picture Research Council supervised tests at Consolidated Film Laboratories and General Film Laboratories in Hollywood to uncover possible problems or difficulties of printing or processing 35mm films on 4 mil polyester base.

"These tests included common printing and developing operations as applied in the making of direct prints, master positives, dupe negatives and second generation prints. Contact continuous, contact step and optical printers were used. All tests were duplicated with a corresponding triacetate film type of 5.5 mil base thickness as a reference.

"Tests made at Du Mont TV, New York, and at CBS-TV, Hollywood, using P824 low-contrast kine recording positive film showed the film to behave excellently in several kine recording cameras and in motion picture film scanners. No problems are expected to be encountered in using the 4 mil based films, and the advantages of thinner films for kine recordings are very definite."

For the cinematographer—both 35mm and 16mm—Cronar, or any similar base made under the Du Pont patents, promises a more durable film for location handling, the ability to load more film into present film magazines (about 35% more), and unusual flexibility at low temperatures. Of course, as Dr. White and his associates have pointed out in their paper, the behavior of finished film depends upon the emulsion coating as well as the base. In low-temperature tests a coated film made with polyester base was flexed 560 times at 40° below zero before breaking, corresponding triacetate stock was brittle and shattered during the first bend. Obviously the new, thin film will overcome many of the difficulties that are encountered when shooting on location in cold weather—which alone at once makes the film something to be anticipated.

According to Du Pont, negative and positive stocks in the new 4 mil base should become generally available in quantities early next year.

(The complete technical paper referred to above and read at the SMPTE convention by Dr. Deane R White will appear soon in the *SMPTE Journal*.—EDITOR). END

BOB GRAY, Film News Editor for KPRC, Houston, Texas, long has been an exponent of the use of existing light in shooting TV newsreels.

The Use Of 'Existing Light' In Newsreel Photography

The author, a top TV news cameraman, takes a stand on the question of "existing light" versus photoflaads in newsreel photography

By BOB GRAY

WORKING with existing light—shooting only with the light as we find it on assignment locations—is now almost universal procedure among U. S newsreel cameramen. For this, credit is due film and lens makers who have stepped up the speed of their products so that today motion pictures can be made with surprisingly few foot candles of illumination.

But is existing light being relied on all too often to achieve the impossible? Isn't there a fairly definite time and place in newsreel work for artificial light too?

Pictorial quality, it seems to me, demands a "yes" answer to this question. A great many TV technical men and no few viewers of TV are of the opinion that a great deal of movie film for television is being shot under poor light conditions just to prove it can be done.

I've been an exponent of existing light photography since late 1952. To me it offered a better way to get more candid pictures than blinding my subjects with photofloods. I argued then, and I still do, that the film reporter should shoot news stories with the natural, available light if it is feasible, and if the subject can be rendered more dramatic or realistic by this method of photography. Very often the newsreel cameraman simply has no time to set up flood lamps. And very often setting up these lights will cause reluctant subjects to shy away. Or swing a fist.

So it's clear that existing light for fast moving news is a mighty handy tool of the trade. It follows too that courtroom photography, for example, may be possible *only* by existing light. You won't convince many judges of your right to film in their courts by blinding them with excessive candlepower.

In other words, we've all made an acceptable case for existing light in the newsreel business. Maybe too good a case.

The lens makers have produced faster lenses—some faster than f/1.0. The film manufactuers have boosted the speed of new emulsions to the point where nearly every cameraman rates their speed according to his own experience with them.

And, finally, many people have been so thoroughly converted to existing light that television screens (proably home movies too) are showing too much flat, underexposed film.

On a summer vacation swing through seven western states I observed one TV station after another televising film of meetings and individuals that had been shot in existing light. It was great to see how film reporters everywhere are breaking down traditional camera barriers. It would have been equally great to have seen better photography.

On entirely too many film stories it was painfully apparent that the film man had "control" over the story, and therefore could and should have used some artificial light to produce better picture results.

Many of us now agree that the only time when truly poor, flat or dark film should be televised to the public is when the story is so all-fired sensational that *any* film on it is an "end of the world" scoop. And like Gobel says, "You can't hardly get them no more."

Let's look a minute at what the existing light arguments really amount to:

The TV film reporter's job, in a nutshell, is to tell his story with pictures. He must show what happened. To do it, he must be highly mobile, prepared to shoot indoors and out on virtually no notice.

He can't have that mobility if he tries, on every indoor yarn, to make a lighting production of it. Especially with

FILM CLIP from newsreel shot of Houston City Council in action. Problem here was to get maximum depth of field, since subjects are at varying distances from camera. Use of wide-angle lens helped solve problem. Shot on DuPont 931 at f/1.5, film given normal development.

WHEN SCAFFOLDING in City Coliseum collapsed during repair job, five men dropped 60 feet to pavement below. This scene was taken about 4 minutes after crash in about 2 foot candles of light. Shot on DuPont 931 at f/1.4, and given maximum development.

CLOSEUP of pistol beside hand of man who used it to shoot sweetheart and himself. Here reliance on existing light made a quick "grab shot" possible that added considerable emphasis to the sequence. 1-inch lens used at f/2, normal development.

TELEPHOTO shot of firemen pouring water into a flaming tenement during a midnight fire. Shot shows how reflected light from fire was sufficient to produce acceptable quality when negative was properly over-developed.

THIS LAD, photographed by Gray in a fluorescent-lit classroom, senses girl in background watching him. But he was completely at ease, oblivious of the camera, because no auxiliary photo-lighting equipment was used to make the shot at f/2.8.

characters who won't wait for him to fiddle with cables and bulbs.

So existing light's big advantage is the ability it gives us to cover much news in a hurry, anywhere.

Second, existing light can do much to break down traditional camera barriers such as encountered often in courtrooms. In nearly every big city, judges are finding that a newsman's camera in court, operated by the prudent reporter, need upset the court's dignity no more than the newspaperman's pencil. And it has the same basic right to be there.

But the camera probably won't be there long if accompanied by eye-searing floods.

Finally, there are situations where existing light can produce more dramatic pictures of a story than artificial light. This is true of some police station-type stories where ample overhead flourescents produce the impact of reality better and with more background detail than floods can.

And in offices with large picture windows, daylight often is as strong and usable (and easier on the story principals) as photolamps.

The one big argument against existing light is that when it's not used well, the results are awful. Fast lenses and film simply will not "see" light that isn't there.

I learned that the hard way once in 1953. I was in a hurry, trying to cover too much with too little time. And one story involved SOF statements from sev-

(Continued on Page 667)

The Industrial Cinematographer

His importance in private industry is growing daily.

By JOHN W. BAKKE

MANY BUSINESS FIRMS who today are clients of industrial film producers owe their success in the use of films to some lone 16mm industrial cameraman who once functioned with in the organization as the company motion picture cameraman and film producer. We know him as the company cinematographer. He was once a better-than-average amateur movie maker, but more likely he is a graduate of the cinema class of one of the many Universities now offering instruction in motion picture production. In the course of making low-cost 16mm films for his employer, he creates both an interest and an eventual need for more important films. Which is where the industrial film producer enters the picture.

Today, opportunities for industrial cameramen flourish among large business firms, many of whom are not yet aware what motion pictures can do for them in aiding employee training and public relations, in recording time and motion studies, and product tests and demonstrations.

THE AUTHOR behind the Bell & Howell camera which he uses in shooting films for the A. O. Smith Corp., Milwaukee

The established business film producer may question the role played by the company cinematographer, believing the latter is performing the function that he is set up to do. Although occasionally this may be the case, generally speaking there is surprisingly little overlapping of film activities between the two. Rather than taking work away from the established professional producer, the company cinematographer makes the films that could not profitably be made by the outside studio. It is the motion picture work that would never be done at all if it were not done by the company cinematographer.

Such jobs as making time and motion study pictures of personnel or machinery; filming infrequent scenes of a spectacular nature, such as a large shipment of the company's product; record scenes of secret manufacturing processes; newsreel shots of company and employee activities; and films dramatizing safe or unsafe working procedures or improved material handling methods. This is the forté of the industry cinematographer. While such filming may not always do a big selling

(Continued on Page 664)

OPPORTUNITIES for industrial cameraman exist among many large business firms who have yet to learn how company-made motion pictures can train employees, aid product tests and demonstrations, and do a valuable public relations job at moderate cost.

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SUMMARY OF CURRENT WID -SC

THE DEVELOPMENT of wide-screen motion picture systems has resulted in six well-established methods now currently in use in Hollywood. A seventh, Panavision, is about to go into use at Metro-Goldwyn-Mayer studio in Hollywood.

For the edification of our readers, the editors have presented here both in pictures and text, a summary of the six systems. With exception of the Cinerama

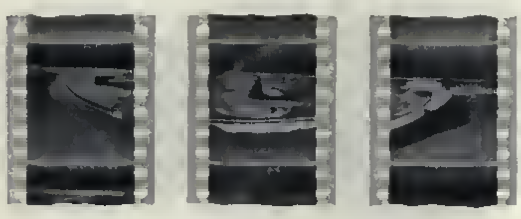
CINERAMA

Camera: The Cinerama camera is actually three cameras in one in that it photographs simultaneously three strips of 35mm negative. The resultant three prints (See below.) when projected form a wide-screen picture that covers a field of vision 146° wide and 55½° high.

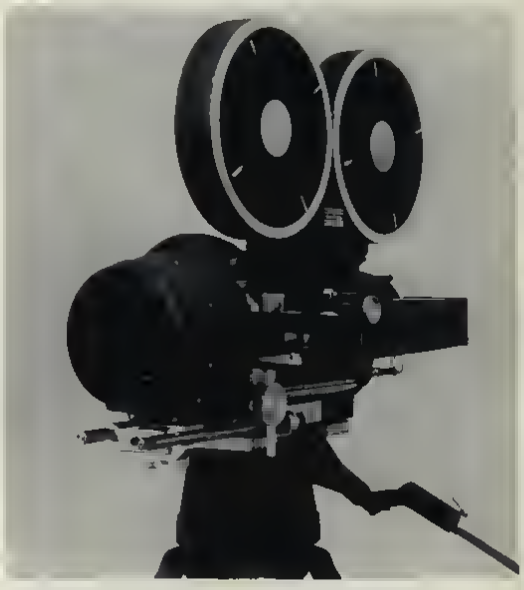
The photo above shows the camera from the rear and reveals the three film magazines. At right is Harry Squire, cinematographer who photographed the first Cinerama production.

Cinerama is the outgrowth of the famous wartime Waller Gunnery Trainer, which utilized a five-lens camera of unique design and five projectors to show airplanes realistically on a large curved screen. The Cinerama three-lens camera is

(Continued on Page 674)



THE 3 Cinerama films (slightly reduced in size) which, when projected together, form a wide-screen picture on a curved screen.



CINEMASCOPE

Camera: CinemaScope is essentially a copyrighted tradename for a system of wide-screen film production developed by 20th Century-Fox Studio The photography involves no special camera but rather depends upon the use of anamorphic lenses for producing the picture image which, when "unsqueezed" during the projection process, produces a picture with an aspect ratio 2 55 to 1. The 20th Cenutry-Fox CinemaScope lenses may be used with almost any standard 35mm motion picture camera equipped with appropriate adapters, and having the aperture enlarged to the CinemaScope dimensions.

Lenses: The whole development of CinemaScope has centered in the camera lenses. Following acquisition of the first

(Continued on Page 674)

REPRODUCTION of a CinemaScope film clip printed from an Eastman Color negative and showing the "squeezed" image

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(Continued from Preceding Page)

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NEW CINE CAMERAS

(Continued from page 680)

Incidentally, Kodak has not overlooked the possibilities of also improving the projection of home movies. Development of a new shutter design has enabled Kodak to produce a new 8mm projector, the Cine-Kodak Showtime, which will fill screens up to five feet in width.

The Showtime's shutter transmits 60 percent more light than shutters of conventional design, which, together with its faster pull-down, makes it possible for this 500-watt lamp projector to give illumination equal to that provided by many projectors equipped with 750- and 1000-watt lamps.

Built into its own case, this projector is so simple to operate that the manufacturer didn't print an instruction manual—all the necessary pointers are on the inside of the cover.

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NEW CINE CAMERAS

(Continued from Page 676)

low, representing the telephoto field. The markings on the three barrels match their respective fields in color, so it isn't necessary to read the name on the barrel to be sure the right one is in place.

Letters and numerals on each barrel make cine photography still easier by indicating the minimum distance at each and every lens opening from f/1.9 to f/16. All objects from these minimum distances, all the way to infinity, will be sharp.

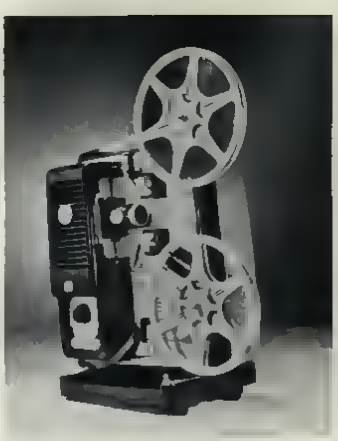
The rear finder of the camera is adjustable to show the field being covered at 3, 4, 5, and 8 feet and at infinity, thus enabling even the most amateur of movie makers to avoid such ills of composition as cutting off heads.

To further simplify the operation of this versatile camera, the manufacturer has marked the average setting for average shooting in red. Thus, in case of any douht, the sunny-day camera user can simply follow the red markings all the way to easy, economical movie making.

Introduced simultaneously with the Brownie Turret camera last month was Kodak's Medallion — new pocket size 8mm magazine cine camera. Weighing

New Cine-Kodak "Medallion," pocket-size 8mm camera.

but 1½-pounds, the Medallion combines the convenience of its 4¼" by 3¾" by 2" size with the ease of 25-foot magazine loading. It is equipped with a 13mm f/1.9 Ektanon lens in standard D-mount. This lens focuses down to 12 inches and is readily interchangeable



Cine-Kodak "Showtime" 8mm projector fills screen up to five feet in width, transmits 60% more light

with several auxiliary lenses for wide-angle and telephoto photography.

The Medallion has true, full-range, continuously variable-power enclosed optical finder of the zoom type showing the fields of lenses from 6½mm to 38mm. It also incorporates parallax-allowance indicators; a unique 3-position eye-piece, enabling matching of the optical characteristics of the finder system to those of the eye, and a focal-plane marker for highly accurate focusing. Shooting speeds range from 16 to 48 frames per second.

To make the Medallion as easy to use as it is to carry, Kodak has marked the camera settings for shooting under average conditions with the same "red dot" system which has been so popular on its still cameras. These dots indicate the finder setting, the frames-per second, the speed, lens position, and exposure to be used for everyday movie making.

A built-in exposure guide permits "dialing" of proper lens openings in accordance with the film, subject, and lighting conditions. Films can be switched from indoor to outdoor, even when partly exposed, without loss of a single frame.

These two new cameras greatly broaden the scope of cine photography. Their smart appointments will appeal to the professional as well as the beginning amateur—and for the latter, they enable him to introduce professional touches in his pictures, giving his productions real prize-winning possibilities.

(Continued on Page 682)

SO, YOU WANT TO BE A CAMERAMAN

(Continued from Page 677)

company personnel and thus demonstrates his ability. There have been instances where a single showing of an employee's film inspired an employer to commission the cameraman to make a film for the company, which led to establishing a small film production unit within the company.

Is there an established business and industrial film producer in your community? Why not approach him for an opportunity to work on the camera staff? Most producers of this kind are growing steadily, and this means increasing the size of the photographic staff.

The lecture or travel film field usually requires more than a knowledge of good cinematography. In most cases, the men who lecture with travel films, also photograph them. But there are some exceptions. One in particular is Ted Phillips, who has photographed many of the Burton Holmes lecture films. Phillips got his start in this field during his amateur movie making days. Having shown a number of his 8mm films to enthusiastic Chicago groups, his good work came to the attention of Burton Holmes. An assignment followed and Phillips was on his way to becoming one of the best 16mm lecture film photographers ever to get into the business. His association with Burton Holmes has continued for years, and during this time he has toured most of the European countries, Mexico and South America for Holmes in quest of screen material for the lecturer's incomparable shows.

So you never know where your real opportunity lies until you look for it. It's probably closer than you think. Search for it with the proper perspective always in view. You need more than ambition and a burning desire to see your name in the credits of a major screen production. There's a lot of work ahead of you if you have chosen cinematography as a career, but most of it will be found in those fields far removed from the Hollywood studios, where the competition is not so keen, where the pay probably is less, but where you have a greater chance for developing into a professional cinematographer as an individual.

HOLLYWOOD STUDIO PRODUCTION

(Continued from preceding page)

TELEVISION

(The following directors of photography were active last month in photographing films for television in Hollywood, or were on contract to direct the photography of television films for the producers named.)

FLOYD CROSBY, "TV Reader's Digest," (Alpha).

ALLAN STENSVOLD, "Dr. Hudson's Secret Journal," (Author's)

KARL FREUND, "I Love Lucy," "December Bride," "Our Miss Brooks," (Desilu).

NICK MUSURACA, "The Lineup," (Desilu)

STU HICKOX, "My Favorite Husband," (Desilu).

WALTER STRENGE, "The Way," (Family).

VISCIL MILLER, "You Bet Your Life," (Filmcraft).

ERNEST MILLER, "Gunsmoke," (Fillmaster).

WILLIAM BRADFORD, "Adventures of Champion," (Flying A).

LESTER WHITE, "Navy Log," (Gallu).

DANIEL B. CLARK, "People Are Funny," (Guedel).

MACK STENGLER, "Ina Ray Hutton Shaw," "It's Fun To Reduce," (Guild).

ROBERT DEGRASSE, "It's Always Jan," (Jaard) and "Make Room For Daddy," (Marterra).

NORBERT BRODINE, "The Loretta Young Show," (Lewislar).

STUART THOMPSON, "Lassie," (Maxwell)

PHILLIP TANNURA, "The Burns & Allen Show," (McCadden)

HARRY WILD, "The Bob Cummings Show," (McCadden)

JAMES VAN TREES, "The People's Choice," (McCaddea)

WILLIAM A SICKNER, "Medic," (Medic).

HAROLD MARZOSATI, "MGM Parade," (MGM)

HENRY SHARP, "Sheena, Queen of the Jungle," (Nassour)

JACK MACKENZIE, "Frontier," (Outpost).

HAROLD WELLMAN, "Wyatt Earp," (6I6)

JOSEPH BIROC, "Superman," (Superman).

KARL STRUSS, "My Friend Flicka," (TCF)

LLOYD AHERN, "20th Century Fox Hour," (TCF).

GUY ROE, "Gangbusters," (Visual)

KENNETH PEACH, "Fury," "The Count of Monte Cristo," (TPA).

CARL GUTHRIE, "Cheyenne," "King's Row," (Warners).

HAROLD STINE, "Casablanca," (Warners)

GEORGE CLEMENS, "Schlitz Playhouse of Stars," (Meridian).

LUCIEN ANDRIOT, "It's A Great Life," (Raydic).

LOTHROP WORTH, "The Great Gildersleeve," (Roach).

GILBERT WARRENTON, "Sergeant Preston of the Yukon," (Skinner).

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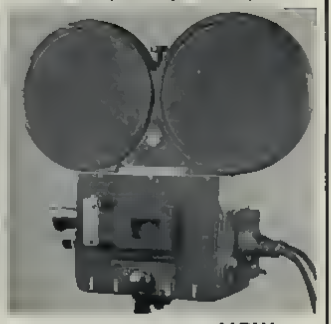

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HOLLYWOOD STUDIO PRODUCTION

Feature and television film productions for which members of the American Society of Cinematographers were engaged as Directors of Photography during the past month.

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FOUNDED January 3, 1919, The American Society of Cinematographers is composed of the leading directors of photography in the Hollywood motion picture studios. Its membership also includes non-resident cinematographers and cinematographers in foreign lands. Membership is by invitation only.

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COLUMBIA

● CHARLES LANG, "The Way We Are." (Wm. Goetz Prod.) with Joan Crawford, Cliff Robertson, Vera Miles, Lorna Greene, and Ruth Donnelly. Robert Aldrich, director.

● BURNETT GUFFEY, "Storm Center," with Bette Davis, Kim Hunter, Brian Keith, Joe Mantell, Paul Kelly. Dan Taradash, director.

● HENRY FREULICH, "Over Exposed" with Cleo Moore, Richard Crenna, Raymond Greenleaf, Roger Smith, Don Randolph, James O'Rear, Leo Mostovoy, Isobel Elsom, Voltaire Perkins and Norma Brooks. Lewis Seiler, director.

● CHARLES LANG, "Solid Cold Cadillac," with Judy Holliday, Paul Douglas, Fred Clark, Hiram Sherman, Arthur O'Connell, Ray Collins. Richard Quine, director.

● BURNETT GUFFEY, "The Harder They Fall," with Humphrey Bogart, Rod Steiger, Mike Lane, Joe Walcott, Carlos Montalban, Harold Stone, Max Baer, Herbie Faye, Edward Andrews, Vinney DeCarlo Mark Robson, director.

ALLIED ARTISTS

● ELLSWORTH FREDERICKS, "The Friendly Persuasion," (Eastman Color, Wide-screen) with Cary Cooper, Dorothy McGuire, Marjorie Main. William Wyler, producer-director.

● FREDERICK GATELY, "The Four Seasons," (Color, Wide-screen) with David Wayne, Keenan Wynn, James Barton, Jim Backus, Myrna Dell. Josef Shaftel, producer-director.

● ERNEST HALLER, "The Come On" (Superscope) with Anne Baxter, Sterling Hayden, John Hoyt. Russell Birdwell, director.

● WILFORD CLINE, "The First Texan," (CinemaScope) with Joel McCrea, Wallace Ford, Carl Benton Reid, Jeff Morrow, Jody McCrea, William Hopper, Scott Douglas. Byron Haskin, director.

METRO-GOLDWYN-MAYER

● ROBERT SURTEES, "Tribute To A Bad Man," (Eastman Color; CinemaScope) with James Cagney, Stephen McNally, Irene Papas, Don Dubbins. Robert Wise, director.

● ROBERT PLANCK, "Coby," (Eastman Color, CinemaScope) with Leslie Caron, John Kerr, Sir Cedric Hardwicke, Tom Ewell, and Margalo Gilmore. Curtis Bernhardt, director.

● ARTHUR ARLING, "Fearful Decision," (Wide-Screen) with Glenn Ford, Donna Reed, Leslie Nielsen, Juano Hernandez, Robert Keith. Alex Segal, director.

● JOSEPH RUTTENBERG, "The Swan," (Eastman Color, CinemaScope) with Grace Kelly, Alec Guiness, Louis Jourdan, Brian Ahern, Agnes Moorhead. Charles Vidor, director.

PARAMOUNT

● LOYAL GRIGGS, WALLACE KELLEY, PEVERELL MARLEY, "The Ten Commandments," (VistaVision, Technicolor), with Charlton Heston, Anne Baxter, Yul Brynner, et al. Cecil B. De Mille, director.

● FRANZ PLANER, "The Mountain," (Technicolor, VistaVision) with Spencer Tracy, Robert Wagner, Claire Trevor, Richard Arlen, William Demarest. Producer-director, Edward Dmytryk.

● LOYAL GRIGGS, "That Certain Feeling," (Technicolor, VistaVision) with Bob Hope, George Sanders, Eva Marie Saint, Pearl Bailey, David Lewis and Al Capp Producers-directors, Norman Panama and Melvin Frank.

TWENTIETH CENTURY-FOX

● CHARLES CLARKE, "Carousel," (Color; CinemaScope) with Frank Sinatra, Shirley Jones, Barbara Ruick, Cameron Mitchell, Claramae Turner, Audrie Christie, Robert Rounseville. Henry King, director.

● JOE MACDONALD, "Threshold of Space," with Guy Madison, John Hodiak, Virginia Leith, Dean Jagger and Warren Stevens Robert Webb, director.

● LEE GARMES, "Bottom of the Bottle," (Color CinemaScope) with Van Johnson, Joseph Cotton, Ruth Roman, Jack Carson, Brad Dexter Henry Hathaway, director.

UNIVERSAL-INTERNATIONAL

● RUSSELL METTY, "Congo Crossing," (Technicolor) with Virginia Mayo, George Nader, Peter Lorre, Michael Pate, Rex Ingram, Tonio Selwart, Kathryn Givney, Raymond Nailey Joseph Pevney, director.

● MAURY GERTSMAN, "Raw Edge," (Technicolor) with Rory Calhoun, Yvonne De Carlo, Rex Reason, Mara Corday, Neville Brand, Herbert Rudley, Robert Wilkie, John Sherwood, director.

● IRVING GLASSBERG, "Cry Innocent," with Merle Oberon, Lex Barker, Abner Biberman, director.

WARNER BROTHERS

● WILLIAM MELLOR, "Giant," (Warnercolor) with Elizabeth Taylor, Rock Hudson, James Dean, Jane Withers. George Stevens, director.

● J. PEVEREL MARLEY, "Serenade," (Warner-Color) with Mario Lanza, Joan Fontaine, Sonia Montiel, and Vincent Price. Anthony Mann, director.

● HAL ROSSON, "The Bad Seed" with Nancy Kelly, Patty McCormack, William Hopper, Evelyn Varden, Mervyn LeRoy, producer-director.

● TED MCCORD, TOM TUTWILER, "The Spirit of St. Louis," starring Jimmy Stewart Billy Wilder, director.

● JOHN SEITZ, "Cry In The Night," (Jaguar Prod.) with Edmond O'Brien, Natalie Wood, Brian Donlevy, Richard Anderson, and Raymond Burr. Frank Tuttle, director.

INDEPENDENT

● LIONEL LINDON, "Around The World In 80 Days," (Michael Todd Prod., Todd-AO) with David Niven, Cantinflas, Shirley MacLaine, Robert Newton, Martine Carol, Noel Coward, Finlay Currie, Fernandel, Sir John Gielgud, Hermione Gingold, Cedric Hardwicke, Glynis Johns, Beatrice Lillie, A. E. Matthews, John Mills Robert Morley, Ronald Squires, Basil Sydney, Harcourt Williams, Luis Dominguin, Buster Keaton Michael Anderson, director.

● SAM LEAVITT, "The Man With The Golden Arm," (Carlyle Prod.) with Frank Sinatra, Eleanor Parker, Kim Novak, Arnold Stang, Darren McGavin, Robert Strauss, John Conte, Doro Merande, George Matthews, Emile Meyer Otto Preminger, producer-director.

● CHARLES BOYLE, "The Great Locomotive Chase," (Technicolor, CinemaScope, Buena Vista Productions) with Fess Parker, Jeff Hunter, Jeff York, John Lupton, Stan Jones, and Claude Jarman Francis D. Lyon, director.

● JOSEPH BIROC, "Nightmare," (Pine-Thomas-Shane Prods.) with Edward G. Robinson, Kevin McCarthy, Connie Russell Maxwell Shane, director.

● JOSEPH LASHELLE, "Run For The Sun," (Russ Field Corp.; Color, Superscope) with Richard Widmark and Jane Greer. Roy Boulting, director.

SO, YOU WANT TO BE A CAMERAMAN

(Continued from Page 657)

the following questions and also any booklets or literature you can send me:

1—How does one enter the profession?

2—What is the nature of the work?

3—How does one get into the field?

4—What are the earnings and working conditions?

Still another reader, who wrote the Editors on the same subject, closed his letter with this paragraph:

"Please tell me also what one has to do before he is able to join the A.S.C., and if your magazine is available to us common people please send me a copy of your American Cinematographer."

In replying to most of these queries, we usually ask one question: "Why set the Hollywood Studios as your goal?"

The real opportunities for the up and coming motion picture cameramen of tomorrow lie in so many other fields—interesting fields, too. Actually, a cinematographer's job in a Hollywood studio today is almost unattainable by any except an experienced cameraman. And you'd be surprised what that word "experienced" entails. Usually it means years of work as an operator or an assistant—sometimes as much as 20 years—before the break finally comes and you are made a First Cameraman. When you are a First Cameraman (strictly a technical term of Union origin) you are also qualified to be called a cinematographer or a director of photography.

Robert Bronner, who is currently directing the photography of "Meet Me In Las Vegas" for Metro-Goldwyn-Mayer studio is a typical example. This is Bronner's debut as a director of photography. Until he was promoted, he had served more than 20 years as a film loader, and assistant or an operator—most of the time at M-G-M.

The cinematographic art, as it is employed in the major studios, and also in making television films, is something that is not acquired altogether in a college course in cinematography, or in a year's shooting of movies with an 8mm or 16mm camera. True professional cinematography is something that has to be absorbed gradually, a skill acquired through a long process of trial and error, of observaiton, of close study and of frustration. Even the "old masters"—the top cinematographers in Hollywood—are still "learning." There is something of a hidden element of competition in major studio cinematography that keeps the director of photography forever on his toes, trying new lighting tricks, novel ways of handling the camera, and better ways to use the many accessories which are available for controlling or conditioning the light that is used for set illumination. All of which has made Hollywood motion pictures the best photographed films produced anywhere.

But to get back to *your* problem, dear reader . . .

Thanks to the constantly expanding use of industrial, training and educational films, to the growing practice of many industrial firms to produce many of their own films, to the growing public taste for travel and lecture films, and, of course, to the use of films in television, the cinematographers of tomorrow have a vast and fertile field to explore quite beyond—and just as interesting—as Hollywood film production. This is the ground for you to spade in search of opportunity. And your best bet to make that important "connection" might very well be in your own home town—with your local TV station, with the furniture factory having difficulty training help fast enough and efficiently, where a training film would quickly solve the problem; with some established growing industrial film producer in need of a man to "start at the bottom" and learn the business; or, if you simply would like to get away from home and shoot motion pictures in new and interesting places, you can set out with camera and film and make travel or lecture films.

Local television stations have opened some promising opportunities for 16mm cameramen. Nearly every TV station of any size and importance has its own film department headed by a motion picture cameraman, usually a man with Army combat photography training or a graduate of a Cinema Class of one of the Universities or Colleges. His function usually is to shoot material for the station's local news telecasts, films of special events, and also advertising spot announcements for some of the station's local clients. Articles in recent issues of American Cinematographer have described some of the more interesting cases of this kind that have come to the Editor's attention.

And what about industry? Your local industrial firms probably offer many opportunities, but they usually have to be developed by the cameraman himself. It sometimes happens that a man with a good deal of experience shooting 16mm films and working for a large industrial plant, develops his opportunities by showing his films to important

(Continued on Page 679)

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ing. Racking is controlled by the operator through a lever at rear of the camera. (For a more complete description see "VistaVision Moves Forward," page 552, November, 1954, American Cinematographer —EDITOR.)

Lenses: All lenses used on VistaVision cameras have been specially designed to cover the double-frame area of the negative. All are mounted in rotating focusing barrels, are in ball-bearing mounts, and are calibrated for T-stops.

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Film: VistaVision cameras take any 35mm negative stock, black-and-white or color

T.C.F.—4X-55MM

(Continued from Page 656)

improved CinemaScope wide-screen photography—much clearer and better defined pictures and almost a total elimination of the distortion common to so many wide screen processes. New 4X-55mm cameras completely engineered from top to bottom are presently being started by a prominent camera manufacturer.

Specifically, what is achieved by this new wide-screen camera and 55mm film is (1) a larger-area negative for use in making direct 55mm CinemaScope release prints of major productions for roadshow type of theatre presentation, and (2) by optical reduction of the 55mm negative, a 35mm CinemaScope print greatly improved in quality over that achieved when the negative is photographed on 35mm film. This is due to the reduction of the magnification factor which results by optically reducing the print from a larger original negative. (See "CinemaScope on 55mm Film," October, 1955, American Cinematographer.—EDITOR.)

Lenses: The Twentieth Century-Fox 4X-55mm camera utilizes an entirely new type anamorphic lens designed by the studio's New York research department in collaboration with Bausch & Lomb Optical Company engineers. Like the dual-purpose, single-unit Bausch & Lomb anamorphic lenses in present use for 35mm CinemaScope photography, the lenses for the 4X-55mm cameras incorporate the same simplicity of focusing and mounting. The focal lengths are 75mm, 100mm and 152mm.

Film: When the first 4X-55 camera was put into use, blank Eastman Color negative stock was slit in widths of 55.625mm, then perforated with a machine which was constructed especially for the purpose by T.C.F. studio engineers. Today, Eastman Color negative in 55.625mm widths, properly perforated, is being supplied in quantities by Eastman Kodak Company.

SUPERSCOPE

(Continued from Page 656)

portions masked off—nor are they actually masked off in the photography.

Where the standard CinemaScope picture has an aspect ratio of 2.55 to 1, the developers of Superscope have settled on an aspect ratio of 2 to 1. The squeezed print therefore is .715" by .715", leaving a blank area at one side, as may be seen in the film clip reproduction.

Lenses: Inasmuch as any standard 35mm camera, which provides an adequate viewfinder, may be used for shooting a picture for the Superscope process, there are no specifications nor limitations as to the lenses that may be used in the photography.

Film: Eastman Color negative is the stock most generally used for Superscope prints; however, the process works equally well with black-and-white films.

NEW CINE CAMERAS

(Cotinued from Page 660)

degrading pictorial or image quality in any way.

The camera sports other important features, too. A built-in exposure guide on side of the camera makes it a simple matter for the photographer to determine proper exposure in accordance with the film used, and the subject and the lighting. Once set for this exposure, the camera is ready for filming no matter what lens is to be used. The beauty of it is that each time you swing the turret to bring another lens into use, you don't have to reset the diaphragm and re-focus. The fixed-focus principle on which the camera's optical system operates takes care of all of this.

The front finder of the camera has three etched rectangles. The largest is in green, outlining the wide-angle field; the medium one is marked in red for the standard field; the smallest is yel-

(Continued from Page 680)

Mitchell features.

Lenses: As with conventional 35mm motion picture cameras, the Todd-AO camera takes a range of lenses of different sizes, but unlike the lenses used on 35mm motion picture cameras, which vary in focal length, the Todd-AO lenses are classified according to the angle of coverage. Four lenses cover everything from a closeup to distant scenic shots. These range from the huge 128° "bugeye" wide-angle lens—socalled because of its enormous front element (See Photo)—down through the 64°, 48°, and 37° lenses.

At present two separate Todd-AO cameras are required in shooting a production, one having the 128° lens permanently attached, and the other designed to take the other three lenses interchangeably. All Todd-AO lenses have a short, sharp vanishing point, and the depth of field is quite shallow—which means that the camera operator really has to be on his toes when moving crane and dolly shots are being photographed.

Film: Todd-AO cameras take Eastman Color negative which is slit and perforated in 65mm width by the manufacturer. The picture area extends almost to the sprocket holes on each side and the equivalent of five sprocket holes in height. Release prints are made on 70mm stock, the additional width providing for the sound track.

VISTAVISION

(Continued from Page 655)

developed in the late 20's by the William P. Stein Co., of New York. The results achieved with it by Paramount in photographing "White Christmas" led the studio to design an improved VistaVision camera, which subsequently was manufactured by Mitchell Camera Corporation, makers of the world's most renowned studio cameras.

Present VistaVision cameras are compact in size, have 2000-ft. magazines—one on each side of the camera instead of the conventional double chamber magazine on top. Camera width is a mere 13 inches while the overall length is 25⅜ inches and the height, 20¾ inches. Approximate gross weight of camera, including 2000-ft. film load, is 105 pounds.

The film moves from right to left a distance of 8 perforations per frame or exposure. The movement is a modification of the well-known Mitchell NC link movement. The pulldown movement (actually the "pull-across" movement) has been shortened to provide a 190° exposure time. The movement racks up and down for alternate viewing of the scene through the lens and photograph

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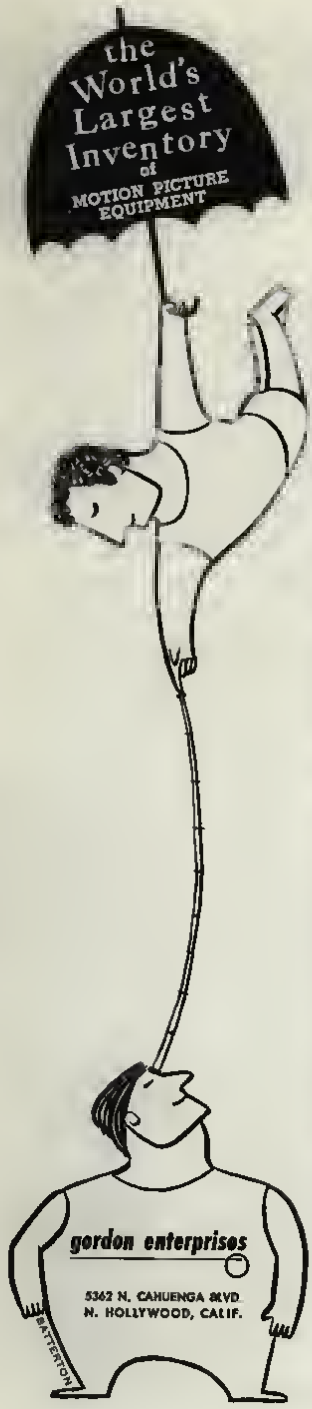

Productions, San Francisco, to distribute the film for theatrical showing.

Van Lier is no comparative newcomer to film production. He was associated with some of the Hollywood major studios in the twenties. Subsequently he was sent to the far East by the J. Arthur Rank Organization to survey the Indian market for 16mm films. After terminating his services with Rank, he set up his own film production company in Bombay, later extending operations into Ceylon and Malaya. Supplying American film producers with stock shots and special footage of far East subject matter has long been a profitable subsidiary operation.

WIDE SCREEN SUMMARY—CINERAMA

(Continued from Page 654)

a modification of the Waller development.

Any of the standard heavy-duty tripods as well as conventional dollies and cranes may be used with the camera.

Lenses: The eyes of the 150-pound Cinerama camera are three matched lenses of 27mm focal length, set at angles 48° apart. Each lens records one-third of the total width of the scene upon one of the three standard 35mm negatives.

The lines of sight of the three lenses converge and cross at a point 11/16-in. in front of them, where a single revolving disc shutter serves them all, and assures synchronization of exposures. Simultaneous focusing of all three lenses is accomplished through a single control, while diaphragm settings on all three lenses are similarly set simultaneously by means of another control knob.

Film: The Cinerama camera takes any 35mm negative stock, black and-white or color. The Cinerama productions made to date have been photographed on Eastman Color negative and processed by Technicolor Motion Picture Corp.

Individual Cinerama film frames are 1½ times standard height—that is, 6 sprocket holes in length instead of the conventional four. (See film clip reproduction.) And since three film strips are used, this means that the total amount of film used for a given production is 4½ times that of a standard 35mm motion picture production of comparable screening time.

As yet Cinerama cameras are not generally available to other film producers, being used exclusively in the making of Cinerama productions.

WIDE-SCREEN SUMMARY—CINEMASCOPE

(Continued from Page 654)

anamorphic lens from the French optical engineer Henri Chretien, Fox launched the first CinemaScope production, "The Robe." Studio engineers, the meanwhile, sought to improve upon the lens and took the problem to Bausch Lomb Optical Company.

The initial Chretien CinemaScope lens was an "attachment" or auxiliary lens—one that was mounted before the regular camera lens. Subsequently, Bausch & Lomb brought out an improved CinemaScope lens which incorporated the anamorphic lens and the camera lens in one unit. Besides improved optical quality, the new lens did away with the necessity of having to make adjustments on two lenses each time a shot was to be filmed.

Bausch & Lomb single-unit CinemaScope lenses today are available in five focal lengths: 35mm, 40mm, 50mm, 75mm and 100mm. 20th Century-Fox also makes the lenses available to other studios, and thus Cinema-Scope-type film productions are today turned out by such studios as Metro-Goldwyn-Mayer, Warner Brothers, Columbia, and others, despite the fact that some of these studios have or are developing their own wide-screen systems.

Film: With one exception (the Fox 4x-55mm system) all CinemaScope productions are photographed on 35mm film—usually Eastman Color negative. DeLuxe Film Laboratories, a 20th Century-Fox subsidiary, processes most all of the studio's CinemaScope negatives and makes the prints. Previously, the work was done by Technicolor, who continues to process and print anamorphic negatives for other studios.

TODD-AO

(Continued from Page 655)

may be mounted on any standard tripod, dolly or crane.

Mitchell Camera Corporation is presently engineering a completely new Todd-AO camera which will incorporate the well-known Mitchell movement, provide for rackover and include other

er on some locations, but in most of the homes and palaces, where many interiors were filmed, he used the regular house current. Oddly enough, he never encountered an overload problem as we do over here when, if we put more than two or three photofloods on a circuit, a fuse promptly blows.

Maintaining consistency of color temperature was religiously followed by Van Lier, who often encountered differences of as much as three points within a ten minute period. As a result, he found himself checking color temperature as frequently as exposure values—virtually before making every shot. For color correction, he employed Wratten filters on the camera lenses.

With unusual artistic flair, Van Lier early established a pattern of soft pas- a result, he often had to replace garish tels for the coloring in his scenes. As costumes, rugs and other trappings with those in keeping with his established color pattern. Only one who had the full confidence of his Royal subjects, as did Van Lier, could accomplish such a thing. Probably for the first time in the lives of many of the maharajas who appear in this film, one outside the royal family circle was permitted to dictate what they were to wear and what furnishings were to be used in their palatial homes and palaces. Perhaps they were well aware of the importance of the motion picture record that was in the making.

Van Lier personally selected the apparel and jewelry that was worn by the 500 to 800 people that appeared in each of the various spectacle scenes, and personally supervised their costuming. In some instances, he directed that the rugs on the floors be changed to a more sombre hue.

And how did he find time for all this? He usually rose at 4 a.m., briefly reviewed his plans for the day, then checked his equipment, and made ready to start shooting at 9 o'clock.

Photographing royalty, he found, is no easy task. It was no use to ask for retakes; so the shot had to be right the first time. "Although they are generally cooperative, they won't give you all the time you need because they are too busy with affairs of state," Van Lier said.

"Glory of Bygone Days" represents four years of hard work—shooting, traveling, editing, sound recording, post-recording, and duplicating film. Van Lier maintains a sizeable studio and laboratory in Bombay known as Maclear Film Productions, and here he printed all his Kodachrome duplicates. The Eastman Kodak Company laboratory in Bombay processed the film, and it is a remarkable job, comparing favorably with the original.

While in the U.S., Van Lier made arrangements with Alfred T. Palmer

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SWAN SONG OF INDIA

(Continued from Page 658)

The film includes scenes of palaces of the rulers, magnificent gardens with playing fountains and statues, the armory kept intact for several decades in which decorated swords encrusted with jewels vie for honors along with guns made of solid gold and drawn by costumed bullocks. A fabulous collection of jewelry, which Van Lier carefully detailed in sparkling closeups, bears testimony to the vast wealth of the kings

A maharaja at prayer in the morning in his own private temple and later carrying out his administrative tasks in his modern office, along with a grand durbar held by the Maharaja of Baroda in his own palace is shown. Tributes are paid to the ruler who is bedecked in elegant clothes glittering with emeralds and diamonds of fabulous worth.

And so this documentary goes on and on, but with never a dull moment, to show liveried soldiers on parade, magnificently decorated elephants with their faces and trunks painted in gay colors and designs, the Hindu festival of Dasehra, night shots of the Maharaja of Mysore's palace illuminated with more than a million electric light bulbs, the festivals of Holi when colored water and powder are squirted on passersby in the spirit of a gigantic Mardi Gras, and the Hindu rites observed on the birth of a baby in a royal household.

A maharaja and his party mounted on an elephant's back go on a leopard hunt and this phase of the picture affords spectacular jungle and animal scenes. Along with animal scenes are mingled human interest shots showing the kind of life led by the hunters themselves.

The film has commentary in English throughout and specially recorded Indian music in the background, all of which was recorded later in Van Lier's studios under his supervision.

The whole production was a one-man operation. That is, Van Lier not only did all the photography, but he did all the lighting of the vast interiors, toted his own cameras and sound equipment, inspected and repaired his cameras faithfully at the close of operations each day, and then before retiring, planned out the following day's work.

Unfortunate experiences suffered earlier with native help caused him to forego any assistants except one, whose sole responsibility was to carry the tripod and help with miscellaneous chores. Van Lier permitted no one to touch his cameras or sound recorder, nor even to carry them. And when you consider that he always used at least three cameras on every location, it is not hard to realize the tremendous load of his labors.

Of the three cameras which he invariably set up for every shot, one was set for a long shot, one for a medium shot, and the other for closeup. All were operated simultaneously by Van Lier, without aid of remote controls.

His complement of cameras consisted of four Cine Specials, each of which had been modified with a PAR 4-lens turret; three Bell & Howell 70-DA's, and a Wall 35mm camera, which was not used on this production. All of the 16mm cameras are electric motor driven.

His lighting equipment consisted of fifty 500-watt floodlites, a number of special baby spots, and a supply of photofloods and reflectors. A Diesel-powered mobile generator supplied pow-

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ratio doing full justice to the vast scope of the subject matter. Whereas it is sometimes a problem in conventional films to fill the elongated screen with sufficient action, both background and foreground, to balance the composition, the photography of "The Tall Men" rarely if ever suffered from this handicap There was always a herd of cattle or a band of Indians to fill out the frame unobtrusively in the background, even when the camera was concentrated on a close shot of a single character or player.

I have not dwelt upon the photography of the interiors of this production, perhaps because, that by comparison with the location shooting, the problems were comparatively few and quite readily surmounted. Along with its greatness in other ways—great story, great cast, and its tremendous entertainment potential, "The Tall Men" is certain to go down in the annals of film production history as entailing the greatest scope of photographic operations of any western story yet filmed. Only with CinemaScope cameras was it possible to put on the screen the vividness and reality, the pictorial beauty and the tremendous action that comprises the very great story of "The Tall Men."

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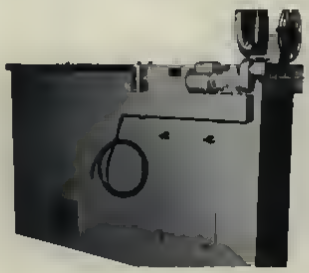

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and the animals required the services of over 100 men to work them and look after them. So if you wonder, after looking over the accompanying photos, what all those people are doing in the pictures but outside the range of the CinemaScope camera, you'll understand the important but anonymous part they played in the production

Actually, the director and the producers of "The Tall Men" had made no conscious effort to break records in the use of animals

"The reason we need so many," Director Walsh explained, "is CinemaScope We need to fill the screen with cattle in order to give an impression of brute power." And after looking at tests, we agreed we couldn't do it with less.

The same theory dictated the employment of 1500 Indians for the big Indian attack scenes—certainly the most grandiose effort of its kind in the history of 20th Century-Fox and perhaps in the history of the industry.

The scope of these operations brought with it many auxiliary problems. Thus, the movement of the cattle in some of the more arid sections kicked up dust which tended to obscure the action from the cameras. At times, as many as a dozen tank trucks equipped with sprinklers were employed in the task of laying the dust with water.

Furthermore, the sheer mass of the herd made it difficult to start, stop and turn it during the many takes that were required of this action. Because of this, sometimes the actors would wait an hour or more for the cattle mass to be put into position so that they could play their scene. Needless to say, the progressively changing light often became a major consideration in these between-take delays.

The delays put the actors under tremendous pressure. A flubbed line or any kind of error would not only cause an hour's delay while the cattle were being put into position again, but in that hour the weather might change and prevent the shot from being made that day

Perhaps the longest dolly tracks ever used in a film production anywhere were laid and used in filming the many "follow shots" of the actors accompanying the herd in the cross-country trek. The execution of these shots entailed as much meticulous planning and rehearsal as did the screen action itself. The smooth manner in which these dolly shots were executed is due entirely to the fine corps of experienced technicians which the studio sent along to aid us on this location

The laying of the dolly tracks themselves was executed with all the engineering skill usually associated with the laying of a stretch of rails for a railroad. The track was smooth, properly gauged, and kept under constant check during the entire time it was in use. The grips and the electricians, whose duty it was to walk along with the moving dolly—moving it and keeping the various power lines free—worked as a well-oiled piece of machinery despite the heat, and dust and other discomforts encountered almost continuously.

The filming of the big stampede scenes was the climax of our production assignment as well as producing the action climax of the picture. Here we brought four CinemaScope cameras into action. Each was set up at a strategic location which was calculated to permit the most dramatic camera coverage from medium closeup to long shot. This was action that hardly could be repeated for retakes; so we had to get it all on film the first time. With four cameras covering it we could be reasonably sure that there would be ample action footage for the film editors to work with, once they undertook to cut this phase of the production at the studio

Ray Kellogg, head of the Studio's Special Photographic Effects Department and cameraman Wally Castle, A S C. arrived on location for the stampede. Their work contributed immensely to enhancing the pictorial and dramatic impact of the sequence.

In planning the exterior photography of "The Tall Men," the aim was always to maintain a feeling of "bigness" in the scenes in keeping with the scope of the CinemaScope frame. Even in the exterior closeups this procedure was faithfully followed; the figures in the foreground would be backdropped by mountain vistas, the herd of moving cattle, or the wagon train. (See the accompanying photo of Gable and Jane Russell with the cattle herd in the background, for one example. — EDITOR.) This technique demonstrates how the large CinemaScope format permits us to include something of the locale as a backdrop in order to maintain pictorial orientation—a technique that is gaining more and more recognition in CinemaScope photography.

"The Tall Men" was a story made for CinemaScope photography. In fact, it is difficult to imagine any other aspect

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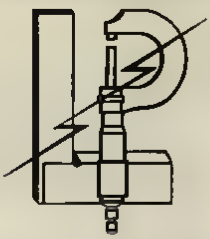

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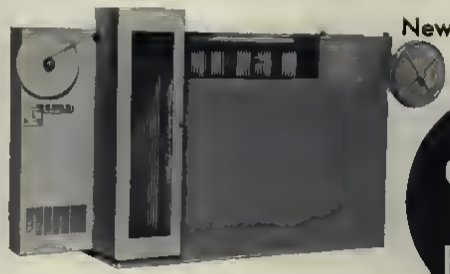
Sun Valley, new problems now confronted us, the most important of which was maintaining authenticity in the matching exterior scenes shot at the studio. This involved matching in color tones and in light quality and direction that of the scenes shot at Sun Valley. The Sun Valley footage ranged from scenes shot in bright sunlight to those shot in dull light during snowstorms. In order to insure accuracy in the photography of the matching closeups shot later at the studio on "indoor exterior" sets, it was necessary to follow closely the photographic data set down earlier as the location takes were made, and also to carefully study the scenes shot on location which were to be matched in closeup and medium shots on the sound stage. Putting a jig-saw puzzle together never entailed greater accuracy and patience.

The phase of the photography that actually tried the souls of all men involved, of course, was the long and arduous shooting of exteriors near Durango, Mexico. The great cattle stampede and other sequences were shot in the aridly beautiful Los Organes valley, 67 miles from Durango. Four thousand head of cattle, the largest herd ever to be assembled for a motion picture anywhere, supplied pictorial scope for our CinemaScope lenses. Over a thousand horses worked in the scenes shot here



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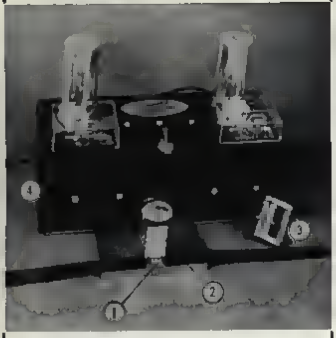

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The meter cannot always warn you of the way window light can "bloom" into your lens, either. Shooting directly toward windows, from indoors is disastrous, unless you're exposing for the scene beyond those windows. Faced with windows on three sides of a room, try to shoot from above or below.

Second, don't get telephoto lens-happy with existing light. We've found it best to stick to the shorter focal length lenses for best depth of field when subjects are apt to move suddenly.

It may take more time to move in for closeups that way, but it's simply a matter of getting the most depth of field with the least chance of error. And, equally important, the least camera movement.

We shoot perhaps 2000 feet of existing light footage per week, and the 13mm f/1.5 lens is used on nearly half of it. Unless you have a controlled story and time for tripod and critical focuser, using lenses longer than 2-inches (50mm) will incur the risk of soft focus. Camera movement is a headache with anything but a 1-inch lens.

Third, get a fast film you like and stick to it. We use one film at our plant for all news and features, indoors and out. (DuPont 931.) Our daily schedule simply moves too fast for anything else. It's often necessary to go quickly from a story in a dark interior directly to a beach-front beauty contest.

So we've come to know the value of red and green filters, the means by which we cut down the speed of the fast films to allow their use in bright sunshine.

Controlled overdevelopment is the gimmick by which existing light gets its biggest assist. In some labs at first, the "forcing" of film was a hit-and-miss proposition. Today they all know how far they can overdevelop newsfilm.

We've given DuPont 931, for example, as much as 400 percent overdevelopment and have encountered no fog. True, it gets grainy. But grain is not apparent as grain when the film is televised, and is not too objectionable upon ordinary projection.

So, everything considered, existing light can be the practical means to coverage of many difficult story situations. But it is not all things to all cameramen. It is not simple to use on many occasions.

And from a picture quality standpoint alone, balanced, thought-out lighting still produces a better quality image on TV or home movie screens than the majority of existing light efforts. That's why I think it important that existing light be kept in proper perspective.

It can be argued logically that newsfilm, like all news generally, is highly perishable. The reporter with typewriter doesn't "write for the ages" each day. Similarly, we can't worry about creating daily film masterpieces so much as trying frantically to capture fully the elements of every news story we must cover.

But we have also concluded at our plant that it is sheer folly to use existing light for an indoor scene just to prove that a picture, however poor, is possible under those conditions.

We've exposed film under less than one footcandle of light and obtained usable results. We don't consider that good photography, though. Rather, it's often a case of no story unless you're prepared to shoot under any conditions.

And those who have no access to controlled overdevelopment would no doubt be wise to consider five footcandles their existing light minimum. Amateur movie makers also will find "bounce" light a far easier tool to use, I think, than existing light. Most home movie fans are dealing with controlled situations and bounce light is often the fastest and best solutions to overall room illumination.

We always make an attempt to bounce our floods off walls and ceiling anytime we can. It makes news subjects more comfortable and spreads the light.

The first thing we tell newcomers to our staff is this: "If artificial light is possible and will improve the picture quality of your story, use it. If it's a fast moving, uncontrolled story, use existing light."

Recognizing existing light limitations does not, it seems to me, lessen its value to us all.

Used properly, existing light can produce the most factual, hard-hitting news records of events now possible with film.

END

SHOOTING "THE TALL MEN"

(Continued from Page 645)

sequence were made later at the studio on the biggest snow set ever constructed there. It cost $100,000, covered four acres of ground, and was covered with 80 tons of gypsum, cornflakes and a new plastic material just being introduced in the studios for use as artificial snow.

On the indoor exterior of the cabin, where Gable and Russell sought refuge during their escape from the Indians, we also used the cabin for necessary interior scenes. It was so constructed that all we had to do was raise the roof and shoot. The basic set lighting was already in place, we and our equipment were already there on the sound stage, and as a result a great deal of valuable production time was saved by this two-way utilization of the set.

Upon returning to the studio from

EXISTING LIGHT

(Continued from Page 649)

eral VIP's in a dim lit office. It wouldn't have taken 15 minutes to set up the proper lights, and I did have control over the story situation.

That's why I was still kicking myself that afternoon when the film rolled darkly out of the processor and the VIP's all looked like so many zombies. My meter hadn't lied really. I had just expected too much latitude from the film and had ordered no overdevelopment.

So, for those now getting their feet wet in using existing light, a few suggestions might be helpful.

First, carefully interpret all meter readings of existing light and tend toward overexposure. The meter manufacturers, by the way, might well consider making their products more sensitive. When you're dealing with less than three footcandles, it's mighty tough to "expose for the shadows." The shadows usually just don't register at all.

Under flourescents it's possible to get a good overall reading from the back of the hand. But if you're shooting a person's face, open up an extra stop if you expect to get complete shadow detail in the eye sockets. *(Turn to P. 668)*

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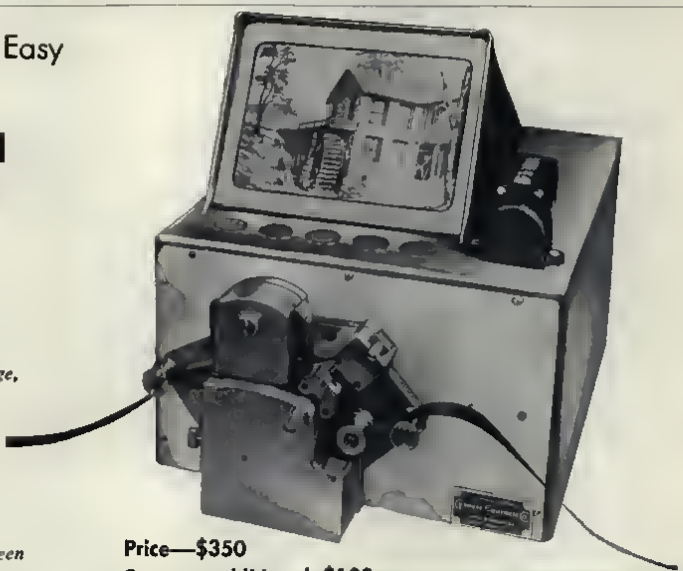

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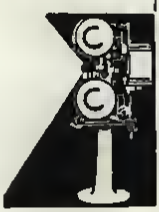

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INDUSTRIAL CINEMATOGRAPHER

(Continued from Preceding Page)

needed to perform these functions. Unless there is a large volume of this work it may be difficult to justify the purchase of such equipment and, more important, to develop the degree of skill necessary to produce with it films of professional quality. The versatile cinematographer capable of getting perfect results through his own efforts in every phase of motion picture production is a rare bird indeed. So don't hesitate to make use of outside services when necessary and whenever they can assist you in making your film a top quality production.

The company cinematographer often holds the key to all motion picture activity with in his company. He should tactfully suggest film solutions to problems of manufacturing or marketing. He should follow up inquries about films, explain production methods, and make recommendations about the feasibility of a film project. He should decide whether or not an outside film producer ought to be consulted and know whom to recommend. He may often assist in setting up a tentative production budget. Here is where the cinematographer may have to sell the value of a film; for a "cheap" film is too often just that. When shown on the screen no one is going to ask whether it is a $25 or a $25,000 film — it will be judged solely on its merits. A mediocre film is a credit to no one. Be realistic, therefore, and make sure that you or the outside producer has a large enough budget to insure production of a good film.

Where an outside producer is chosen to make a more pretentious film for the company, the company cinematographer can render a valuable service by preparing the way within the plant and informing the producer of any technical or safety problems that may arise. In addition, he may be able to furnish "stock shots" from the company's film library for the production. As a liaison man between the company and the producer he can do a great deal to assist all concerned in the rapid and efficient production of the film.

Much of what has been set down here is based on the writer's own experiences as director of photography of the motion picture department of the A. O. Smith Corporation, Milwaukee, Wisconsin. Our film making has often been challenging and this has invariably called for resourcefulness and ingenuity on the part of all concerned with our productions. From my personal experience, I believe that the company cinematographer, given the cooperation and necessary assistance, can render a valuable service to his employer. There are many large industrial firms utilizing big budget film productions today who probably never would have considered films at all if it had not been for the startling results produced with low-cost films by a salaried cameraman and jack-of-all-film-trades employed earlier by the company.

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Good, basic camera equipment should be kept in readiness for any need. A reliable hand camera with sturdy tripod and a normal complement of lenses, an exposure meter, a small stock of film (both color and black-and-white) and some portable lighting equipment should be on hand at all times. Your chief value to the company is your ready availability when the need for filming an event arises. While the basic equipment listed above can be augmented until your department looks like a miniature Hollywood studio, several serious questions should be answered before any complex or expensive items are acquired. They are:

1. Will the equipment be used often enough to return its cost in savings over a reasonable period of time?
2. Do I, or any of the people working with me, have enough skill and experience to operate this equipment in a *professional* manner and will this equipment be used often enough so that the operator will know at all times what the end quality of his product will be?

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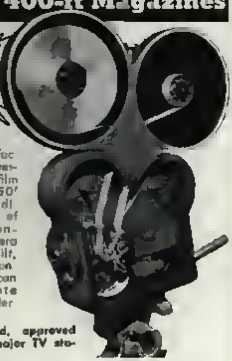

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SYNC SOUND WITH ANY PROJECTOR

(Continued from Page 663)

ft is expected to appear in Britain about the end of this year.

The day after seeing the Peterson I went out to Pathescope's head office in the northern outskirts of London to have a look at the Aurator. The major reason for the difference in price was obvious at once. The Aurator has no motor, and relies solely on the projector it's used with for its speed of 16 frames-per-second.

The lack of a truly constant speed is a serious drawback, and is not entirely overcome by the stroboscope disc embodied in the magnetic head. Any commentator-cum-recorder-cum-projectionist is going to be fully occupied. He's apparently expected to keep one eye on the screen and the other on the strobe disc while taking a quick glance now and then at the volume indicator, a neon lamp.

Perhaps my earlier reference to the Peterson's superior performance is a little unfair, for the circumstances of the demonstration of the Aurator made it impossible for me to judge the real capabilities of this machine. The first recording I heard sounded more like an advertisement for the "snap, crackle and pop" of a breakfast cereal than for an item of equipment which, to quote Pathescope, "marks the fruition of many months of research and work on the test bench."

Interference from the motor of the Pathe 9.5mm Gem projector seemed to be the cause.

I have since been told that the interference actually came from a nearby 16mm stripe projector which had inadvertently been left switched on. The Gem motor noise was, in fact, suppressed.

The quick jangle of piano music recorded by the demonstrator seemed to me a rather crafty choice, for it was quite impossible to detect any wow in the recording. I should have liked to hear violins; but the manufacturers insist that "the Aurator must not be considered as a suitable medium for concert quality reproduction or for use as a solo musical instrument."

This rather unfortunate demonstration might make any further comment unjust. In any case, this machine is only suited to 9.5mm and will not, in its present form, be of great interest to U.S. readers. When the 16mm Aurator becomes available, I hope to report at greater length on its operation and performance, as I believe that it may find its way to the American market.

THE INDUSTRIAL CINEMATOGRAPHER

(Continued from Page 650)

job for the company, it invariably offers a film solution to many company problems.

For the 16mm cinematographer entering this type of work, the following advice and information may prove beneficial. A prime requirement for a good company cinematographer is a realistic attitude regarding his own capabilities and limitations; it is senseless to try to duplicate the facilities and services that are readily available from established commercial laboratories.

He should have a good working knowledge of his company's organization. He should know by sight the more important executive personnel and department managers.

He should be familiar with plant locations and manufacturing operations and know the "chain of command," so that the proper people are notified whenever shooting is to be done in any department of the plant.

He should know the company safety rules and observe them faithfully.

He should be acquainted with the power requirements of his motion picture lighting equipment and be able to arrange for electrical service in any part of the plant when needed.

He should be familiar with company transportation facilities and know how to obtain temporary labor when needed to assist in moving of equipment or film production.

The company cinematographer should have a thorough knowledge of all technical processes to be photographed; when in doubt, he should know whom to contact for authoritative information. He should cooperate with manufacturing personnel when photographing in the plant. If production must be interrupted due to the requirements of the film, permission should be obtained beforehand from the department head. When such permission has not been granted, care should be taken not to cause a loss of productive time for any employee. When heavy electrical cables are to be connected for set lighting, they should be run and patched into the master switch boxes during non-productive hours, if their connection would necessitate shutting off machinery in active use that is connected to the same box.

under the circumstances they were inevitable. The Peterson costs almost twice as much as the Aurator, but gives—as it ought to—a superior performance.

Both the recorders take the form of separate units which stand beneath the projector, as shown in the accompanying illustrations. The Peterson costs approximately $276.50. (The 16mm model will sell for approximately $332.50), but the cheapest microphone, stand, cable, headphones and cover cost nearly another $28.00. The Aurator is only $159.60 complete. These are the prices in London.

The Peterson's loudspeaker is contained in the lid of its case which measures 18 ins. by 11½ ins. by 9½ ins. and weighs 32 lbs. Any 8mm projector with a variable resistance for speed regulation can be used with the recorder. L.I.F. Magnetics, Ltd., who are distributing the Peterson in Britain, make the necessary modification (which simply involves connecting the sliding resistor in the recorder in series in the circuit of the projector motor) for about $4.00.

The striped film is threaded through the projector in the normal way as far as the lower projector drive sprocket, from which it runs straight down to the recorder. The film path through the recorder is simple:—around three idler rollers, past the sound head, around the drive capstan and another idler roller and onto the take-up spool, which is fitted in the recorder.

The motor of the recorder operates the machine at 18 or 24 frames-per-second. Why 18 rather than 16? Peterson, the Dutchman who invented the recorder, believes that amateurs invariably project their films a little faster than they shoot them. The 24 f.p.s. speed is intended for screening professional films with magnetic sound tracks, which should soon make their appearance on the market.

Synchronization between the speeds of projector and recorder is ingeniously checksd by the second idler roller, which is internally connected to the sliding resistor previously mentioned. The roller is lightly spring-loaded and is free to move along a curved slot. When the roller is in the center of the slot, both machines are in sync.

If the projector runs too fast, the loop between projector and recorder grows, and the roller slackens to the left, causing more resistance in the circuit and thus slowing down the projector motor. Similarly, if the projector runs too slow, the roller is pulled to the right, and the opposite procedure occurs.

Music and speech can be recorded together, as two inputs are provided, one for microphone and one for record player. But as recording automatically erases a previous track, it is impossible to add commentary on top of music. Headphones can be connected to the machine to check the comparative volumes when recording both simultaneously, and a magic eye indicator shows the modulation level.

The sound quality at 18 f.p.s. (which means a recording speed of less than 3 inches per second) is astonishing. Voice reproduction is more than satisfactory, and although there was slight flutter on the rather testing music I recorded, a piano accompaniment recorded the previous day bore no trace of it. Projector noise can be heard behind speech, unless the commentary is given by someone other than the operator, when the microphone can be placed far enough away from the machine to avoid projector whir altogether. Music covers the sound sufficiently even when mike and projector are quite close.

Although high music and bird songs are beyond the range of the Peterson (as the slow recording speed suggests), its performance is remarkably good. Incidentally, exchanging idler rollers and adding a feed spool turns the machine into an excellent tape recorder. The only drawback is the price, which is unlikely to drop for some time.

About 40% of the parts are made in Britain and shipped to NV Hollandse Signalapparaten for assembly. Unfortunately import duty is payable on all bidden parts when the complete recorder is shipped into the country, which means that only the case is duty-free. This paradoxical situation—paying import duty on British items — seems likely to persist.

I saw a prototype model of the 16mm machine, which but for its bigger motor and soundhead and an additional roller for larger spools, is almost identical to the 8mm machine.

(Continued on Next Page)

THE PATHESCOPE Aurator is a complete record-playback unit designed especially for use with Pathescope 9.5mm projectors. Unlike the Peterson, illustrated at far left, the Aurator has no motor and depends upon the projector to draw the film over the sound head, and maintain it at the necessary 16 f.p.s. speed.

THE AURATOR is placed beneath the projector and the film threaded through the sound-head assembly, as shown at left, it then proceeds to the regular takeup reel of the projector. Correct sound speed is maintained by watching the strobescope and adjusting the projector rheostat.

Synchronized Sound With Any Silent Projector

New apparatus now on European markets couples easily with 8mm and 9.5mm projectors to play sound recorded magnetically on oxide-coated films.

By HAROLD BENSON

WHEN magnetic tape recorders first became available, the amateur movie maker's dream of sound accompaniments seemed to have been realized. But the difficulties of syncronization soon became apparent. Background music presented no problems, but commentaries and effects were apt to be at odds with the screen image.

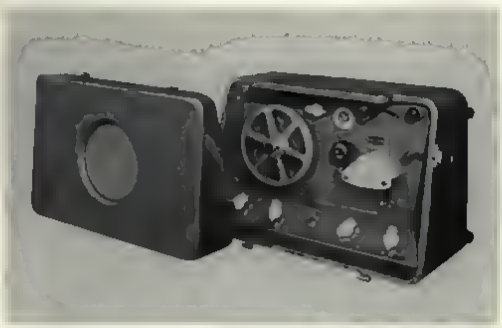
The endeavors of amateur and professional engineers to maintain accurate synchronization met with varying degrees of success. Then magnetic stripe projectors arrived, to be welcomed with the acclamations that tape recorders had at first received. A simple matter of applying a thin stripe of iron oxide along the edge of film which had already been processed, and spot-on sync sound could be there forever—unless erased in a careless moment.

Anyone with sufficient ready cash can now obtain a 16mm sound projector which will play stripe and optical tracks, selectively and record commentary, music and effects magnetically. But these semi-Utopian machines have been primarily designed for commercial use, which means that they carry a commercial price tag.

The awful thought that magnetic stripe might vanish as rapidly as it appeared is also responsible for a certain amount of wariness on the part of the majority of amateurs. It wouldn't be the first time that some of them had found themselves left with an expensive item of equipment fit only for a cinematic museum.

But in Britain, at least, manufacturers seem anxious to quiet these qualms. Two new pieces of apparatus designed for the ciné addict who wants to add stripe tracks to his films on his own projector have recently been announced. One, the Peterson Magnetic Recorder, is for 8mm projectors, and the other, the Pathescope Aurator, is for 9.5mm machines. (9.5mm is still a popular gauge in this country). Both companies intend to bring out 16mm equipment of a similar nature soon.

I have attended private demonstrations of both these recorders, studying them purely from the point of view of the lay amateur who wants good quality synchronized tracks as inexpensively as possible. Comparisons may be odious, but



BRITISH-MADE Peterson Magnetic Recorder is an efficient portable unit which enables practically any silent film projector to be used as a complete sound recorder-projector. As shown, the speaker is housed in demountable cover of the attractive case. Illustrated is the 8mm model; 16mm model is due soon.

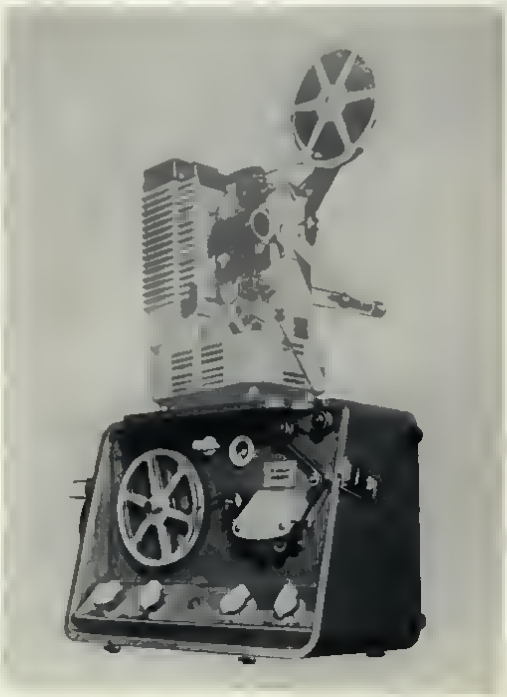


PHOTO at right shows how projector is mounted on top of the Peterson unit and the sound-striped film is run directly to the recorder from the lower projector sprocket. The apparatus records as well as reproduces, and the sound is always in sync.

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THE NEW Brownie 8mm Turret Movie Camera brings the most amateur of movie makers telephoto and wide-angle lens effects with a mere twist of the wrist. New departure in lens design makes use of "converter" lenses to give all the versatility of cameras costing twice as much.

New Kodak Cine Cameras Simplify Movie Making

With a twist of the wrist you can shoot with a standard lens, reach out for a wide-angle view, or pinpoint it telephoto fashion—without changing the focus or f/ stop.

VETERAN amateur movie makers can remember when owning a cine camera having a turret with full complement of lenses was an all-consuming ambition. A camera such as this was a genuine luxury, owned by a comparative few.

Today, a turret camera in the popular priced field—selling for under a hundred dollars—has become a reality. With a twist of the wrist, the amateur can now shoot a scene with the standard lens, reach out for a wide-angle view, or pinpoint it telephoto fashion—*without focussing or re-setting for exposure.* This last feature is something early-day amateur movie makers never had.

This new concept in amateur movie making is made possible with the introduction last month of the newest member of Kodak's famous Brownie camera family—the Brownie 8mm Movie Camera, Turret f/1.9, selling for about $79.50.

How can Kodak turn out a turret camera with lenses at such moderate price? The secret is in the ingenious design which has the camera equipped with a single 13mm f/1.9 lens, fixed focus, within the camera itself. The turret, which rotates in the conventional manner on the front of the camera, holds a 24mm telephoto converter, a 9mm wide-angle converter, and the lens barrel for the standard lens. Thus the camera has all the versatility and all the effectiveness of a camera equipped with three complete lenses—standard, telephoto, and wide-angle. The converter lens, growing in popularity, solves the lens-cost problem without

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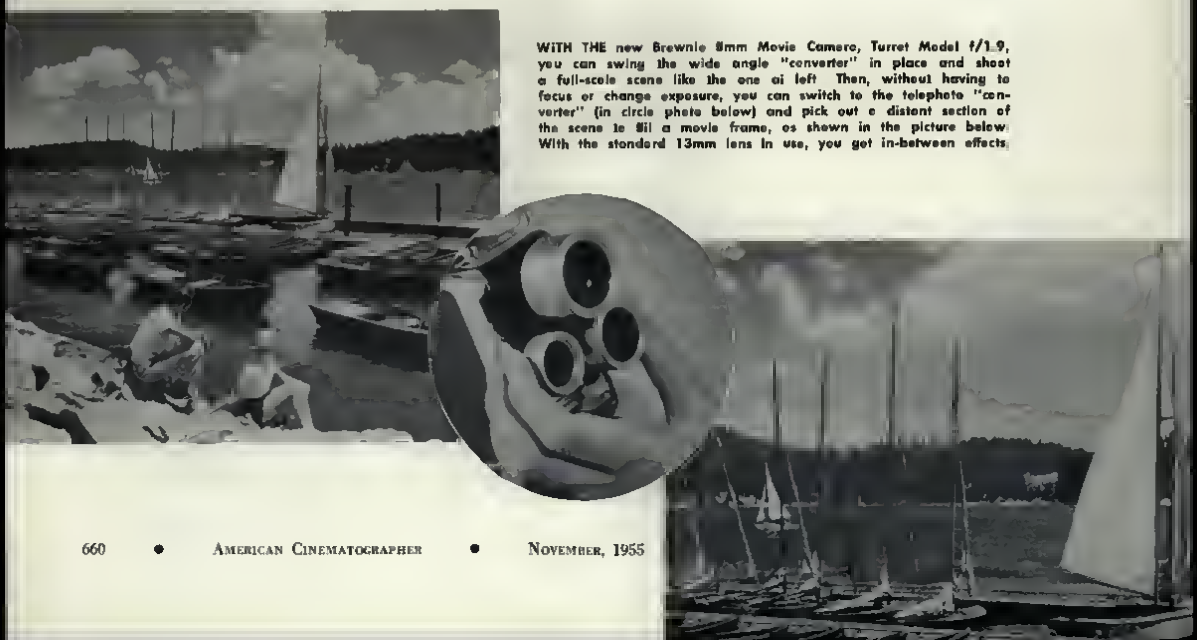


WITH THE new Brownie 8mm Movie Camera, Turret Model f/1.9, you can swing the wide angle "converter" in place and shoot a full-scale scene like the one at left. Then, without having to focus or change exposure, you can switch to the telephoto "converter" (in circle photo below) and pick out a distant section of the scene to fill a movie frame, as shown in the picture below. With the standard 13mm lens in use, you get in-between effects.

TO PHOTOGRAPH the fabulous collection of jewels of one maharaja, Van Lier was permitted to bring them out of doors in the palace courtyard where he filmed them against a backdrop of soft black velvet. These rare pieces are seen in vivid closeups in Van Lier's production.

AN INTERESTING sequence of "Glory of Bygone Days" is devoted to the animal life of India and the native procedures for hunting same. Here Van Lier poses with a cub which he tamed for a pet.

was taking place and realized its impact on history. He saw that eventually all the age-old customs of the maharajas were destined to disappear and that their long reign was virtually at an end.

Here, he thought, is vital history in the making. And being an experienced and resourceful film maker, he took advantage of the opportunity to put on film in color and sound the last vestiges of the glory, the fabulous pomp and pageantry of yesterday's India while there was yet time. His multi-reel documentary in 16mm Kodachrome entitled "Glory of Bygone Days" is the result.

Van Lier, who has been the motion picture photographer of maharajas for a long time, put to good use his long friendship with Indian royalty. Many of the maharajas, maharanis and their relatives make personal appearances in the picture in scenes filmed within their palatial homes and palaces, and also in many of the picturesque state ceremonies.

The production is the result of painstaking labor spread over a number of years and shot on the spot. That is, in the actual locales. Many of the scenes contained in the film contribute a useful record to contemporary history, as these are not likely to be seen again now that the maharajas have given up most of the pageantry and colorful pomp and ceremony which only very recently was their natural daily mode of living.

The picture begins with scenes of an Indian village—the real India—then skips to a vast modern construction project as a means of pointing up the progress already taking hold of the country. The story of the glory in which the rulers of native states lived and its contrast with the daily life of the poor classes is told in this film through the narration in English of Sham Desai, who himself has grown gray and feeble with years in the service of royalty.

(Continued on Page 672)

USING a hand-held 16mm camera, Van Lier moves in for a closeup of a Princess enroute to a festive affair in her gold carriage. Van Lier's photography has recorded the rich colorings and exquisite quality of all the material things associated with Indian royalty, and soon to be a thing of the past.

BEHIND the Cine-Special camera, shooting a scene for his production "Glory of Bygone Days," is cinematographer-producer M. P. S. Van Lier, of Bombay, India. Picture is a historical document of the splendor of the days of the maharajas before India won its independence, and was filmed in 16mm Kodachrome. Here Van Lier shoots closeup of native who narrates the picture.

Swan Song Of India

India's independence sounded the death knell of pomp and pageantry of the maharajas. Yet, before all had entirely disappeared, an imaginative cameraman recorded an film the last vestiges of royal splendor as a valuable contribution to contemporary history.

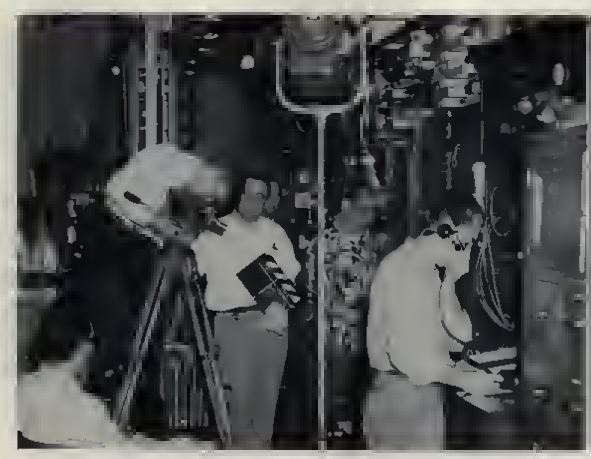
By FREDERICK FOSTER

SOONER OR LATER, everyone who has ever made a motion picture professional or amateur, finds his way to Hollywood, mecca of the film world. As a result, we often see here some very unusual and interesting films, and are moved to marvel at the resourcefulness and the abilities of the imaginative cinematographers responsible for these remarkable productions.

Last month one of these film makers visited Hollywood and brought with him a most unusual film which he photographed in India in 16mm Kodachrome. The cinematographer-producer is M. P. S. Van Lier of Bombay, India, The film, "Glory of Bygone Days," a documentary of a fast disappearing way of life in India.

Following the granting of total independence to India some years ago, marked changes in the way of life of its inhabitants began to take place. The maharajas no longer wielded the power of former years and although they retained, in most instances, their rich land holdings and their wealth of fabulous jewels and jewelry, they gradually dispensed with the pomp and splendor that had been tradition in their lives, dating back to their ancestors.

Van Lier, who had lived in India for more than a decade, observed what



AN INTERNAL film production unit functioning within the Bell Telephone Company, San Francisco. Many large industrial firms offer opportunities for cinematographers

TELEVISION studios offer one of the most promising fields for the 16mm cameraman seeking a foothold in professional cinematography. Enthusiasm and resourcefulness are vital requisites

So, You Want To Be A Hollywood Cameraman...

Major studio cinematography is an exacting and highly competitive field — a goal a long way off for the amateur and one with dubious possibilities for the more experienced non-professional. But there are other promising fields, all worthy of careful explanation if you're set on a cameraman's career.

By ARTHUR ROWAN

WHAT MUST ONE do to become a professional cinematographer? Is there really any chance for an aspiring non-professional eventually to land a job in the Hollywood studios? Where can I train to become a professional Hollywood director of photography?

These are typical questions contained in letters that are received almost daily by the Editors or by the Secretary of the American Society of Cinematographers. Following is one of the most recent letters received — a letter that might have been written by anyone of a hundred other men who, like the writer, also was trained in combat photography by the Army Signal Corps, likes the work, and would like to make a paying profession of it:

"Gentlemen:

This letter is very simple. How does one get to be a cinematographer?

In Chicago, the Union is so tight you have to be a detective even to find their offices. If by chance you should meet a cameraman, as I did, they refuse to talk about the subject. I think it would be much easier to find out how the atom bomb works.

I acquired this drive to be a cinematographer in the Army. They trained me to be a combat photographer. The Army being what it is, they sent me to England where I did photographic coverage on a B-47 base.

If you have any comments, suggestions, or sympathy, please forward it to a guy who is not asking for a break, just a chance."

Another:

"Editor:

I am very much interested in cinematography. Would you tell me the steps that should be taken in order to become a cameraman in the studios? Would one have to start as an apprentice in one of the studios, or follow a course in movie photography at some school?"

And this one from a GI in Germany:

"Dear Sir:

I am writing for some information concerning cameramen in the motion picture field. I already have had 2 years of college but I plan to make photography my vocation when I am separated from the Army.

I would appreicate your answers to

(Continued on Page 677)

T.F.C. 4X-55 MM

Camera: Like CinemaScope, the T.C.F. 4X-55mm camera is an exclusive Twentieth Century Fox development. "4X-55MM" means that the camera uses 55mm film (actually it is 55.625mm in width) and the frame provides a 4-X or four-times greater picture area than 35mm. (See film clip reproduction below.) The first 4X-55mm camera was an adaptation of an old discarded camera which provided enough of the basic requirements to make its adaptation not only a speedy operation but an economical one as well. The necessary mechanical work was done on the T.C.F. lot by studio engineers.

The camera, which employs an improved CinemaScope lens, makes possible, along with the wider negative, greatly

(Continued on Page 676)

SUPERSCOPE

Camera: Unlike with most wide-screen systems, Superscope requires no special camera. Basically an anamorphic process, the squeezing of the image is done in the laboratory, after the negative is shot. The only requirement in the photography is that certain limitations be observed in framing the action —i.e., the CinemaScope format must be observed in framing, and this is done by appropriately masking the camera finder top and bottom.

Thus, in the laboratory, after the negative is developed, this area is optically printed with the aid of Superscope anamorphic lenses, producing a print like the one below, at right. The film clip opposite shows the negative area covered by the camera, but does not show the top and bottom

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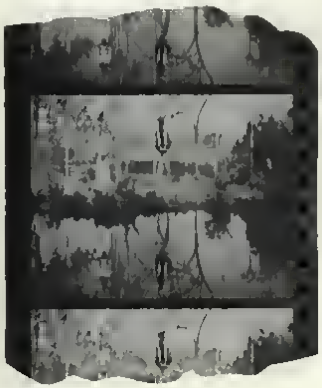

REPRODUCTION of the Twentieth Century-Fox 4X-55mm CinemaScope negative, having 4 times more information recording area.

FILM on left shows area photographed for Superscope and on right the anamorphic print of the masked and squeezed area.

REEN SYSTEMS OF PHOTOGRAPHY

film clips, which had to be reduced slightly in order to fit the space, all film reproductions on these pages are full size and show the comparative negative sizes used by each of the systems, and also any unusual placement of the image, as in VistaVision, which has the picture in horizontal position instead of the vertical, which is standard with all the others.

This feature is continued on the next page.

VISTAVISION

Camera: The outstanding feature of the VistaVision camera is the fact the negative travels past the lens horizontally instead of the conventional vertical manner. This makes possible recording a pictures area 8 sprocket holes in length, and providing a large negative image which undergoes a measure of reduction in printing the positive release print. It also makes possible the screen aspect ratio of 1:66 to 1, which Paramount Pictures Corp. established sometime ago as the most ideal screen size for the majority of the nation's theatres. VistaVision is Paramount's answer to Fox's CinemaScope.

The first VistaVision camera was a hasty adaptation of an old abandoned William Fox "Natural Color" System camera,

(Continued on Page 675)

THE double-frame horizontal negative of the VistaVision camera has a picture area eight sprocket holes in width

TODD–AO

Camera: The first Todd-AO cameras were modified Thomas-Color cameras, designed for use with 70mm film. The sprockets, movement, etc., were altered by Mitchell Camera Corporation to take standard Eastman 65mm film. Each frame is 5 sprocket holes in height. Another feature is the higher film speed travel—30 frames per second as compared to 24 for standard 35mm cameras—which was found to smooth out action on the larger screen. Film magazines, which are demountable, take 1000-foot rolls of film. Only slightly larger than the Mitchell 35mm camera, the Todd-AO camera

(Continued on Page 674)

FILM CLIP of Todd-AO 65mm positive printed from a 65mm negative. Regular release prints with sound track are 70mm wide.

to put *mood* on film...

Clark Gable and Jane Russell in "The Tall Men," 20th Century-Fox CinemaScope production, filmed with B&L 40mm Baltar CinemaScope Lenses—combined cine-anamorphic lens, single focusing adjustment

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